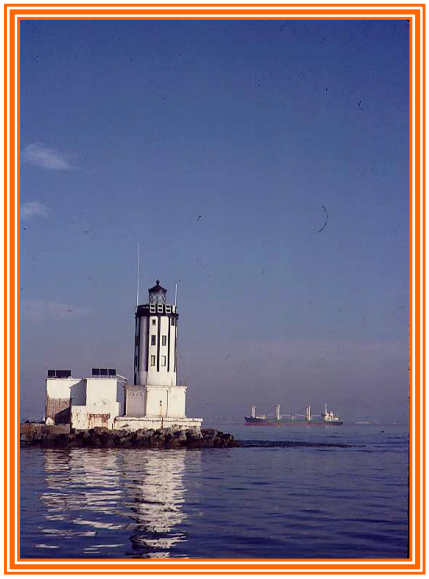
California
Regional Water Quality Control Board
Los Angeles Region



Watershed Management Initiative Chapter
October 2004

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October 2004

OVERVIEW

Water resource protection efforts of the State Water Resources Control Board and the Regional Water Quality Control Boards are guided by a five year Strategic Plan (currently being updated). A key component of the Strategic Plan is to utilize a watershed management approach for water resources protection.

To protect water resources within a watershed context, a mix of point and nonpoint source discharges, ground and surface water interactions, and water quality/water quantity relationships must be considered. These complex relationships present considerable challenges to water resource protection programs. The State and Regional Boards are responding to these challenges within the context of our organization's Watershed Management Initiative (WMI). The WMI is designed to integrate various surface and ground water regulatory programs while promoting cooperative, collaborative efforts within a watershed. It is also designed to focus limited resources on key issues and use sound science.

Previously, State and Regional Board programs tended to be directed at site-specific problems. This approach was reasonably effective for controlling pollution from point sources. However, with diffuse nonpoint sources of pollutants, a new regulatory strategy was needed. The WMI uses a strategy to draw solutions from all interested parties within a watershed, and to more effectively coordinate and implement measures to control both point and nonpoint sources.

For the initial implementation of the WMI, during the late 1990s, each Regional Board identified the watersheds in their Region, prioritized water quality issues, and developed watershed management strategies. These strategies and the State Board's overall coordinating approach to WMI are contained in the *Integrated Plan for Implementation of the WMI* which is updated annually. In following years, the Regional Boards have continued to build upon their early efforts to utilize this approach. The full version of our WMI Chapter outlines our ongoing efforts to continue implementation of the WMI.

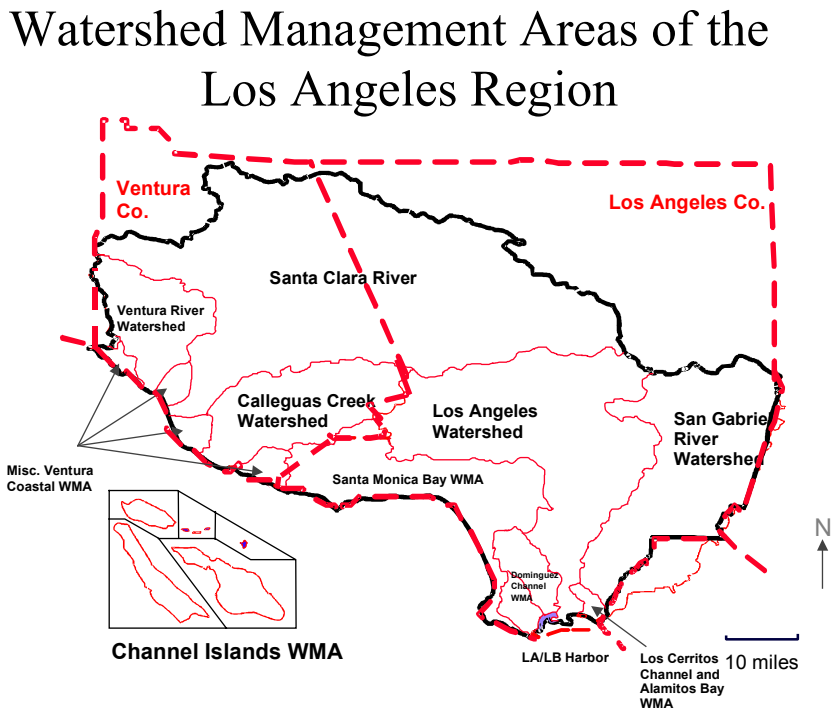
The Los Angeles Regional Board and Watershed Management

The Los Angeles Region has jurisdiction over all coastal drainages flowing to the Pacific Ocean between Rincon Point (on the coast in western Ventura County) and the eastern Los Angeles County line, as well as the drainages of five coastal islands (Anacapa, San Nicolas, Santa Barbara, Santa Catalina, and San Clemente). The Regional Board's jurisdiction also includes all coastal waters within three miles of the continental and island coastlines.

The Los Angeles Region is the State's most densely populated and industrialized region. Over 1,000 discharges of wastewater from point sources in this Region are regulated by the Los Angeles Regional Board. Over 700 of these point source discharges are discharged to surface waters, and are regulated under the National Pollutant Discharge Elimination System (NPDES). In addition, the Regional Board prescribes Waste Discharge Requirements (WDRs) for the remaining discharges, which are primarily to ground waters and landfills. However, the quality of many waters continue to be degraded from pollutants discharged from diffuse and diverse nonpoint sources. Future success in reducing pollutants from nonpoint sources and achieving additional reductions in pollutants from point sources requires a shift to a more geographically-targeted approach.

Our watershed management approach integrates activities across the Regional Board's many diverse programs, particularly permitting, planning, and other surface-water oriented programs which have tended to operate somewhat independent of each other. This approach enables us to better assess cumulative impacts of pollutants from all (point and nonpoint) sources, and more efficiently develop watershed-specific solutions that balance the environmental and economic impacts of our actions.

We have designated ten watershed management areas in the Los Angeles Region as shown in the figure below.



Initially, implementation of watershed management in the Los Angeles Region occurred in phases over a seven-year cycle for our pilot watersheds Ventura River and Calleguas Creek. We are now shifting to a five-year cycle to be in line with the standard permit life (of an NPDES permit) and to equalize workloads over the years. This shift in our watershed cycle is illustrated in the table on the next page. The majority of permit-related tasks such as permit renewals/revisions and regional monitoring program development as well as preparation of state of watershed reports, will occur during the first approximately twelve months of the watershed's five-year cycle. Much of the rest of the five-year cycle will be spent developing and implementing, with the input of stakeholders, measures for management of more complex pollutants from point and/or nonpoint sources. Many of the region's TMDLs will be implemented during the second cycle of permit renewals.

It should be pointed out that the involvement of stakeholders is critical to the success of watershed management; however, the process to involve stakeholders demands more of regulators in terms of public outreach, education, and consensus building.

Watershed Management Initiative Timeline

Los Angeles River	FY 2004/05
San Gabriel River Los Cerritos Channel Channel Islands	FY 2005/06
Ventura River Misc. Ventura Coastal Santa Clara River Calleguas Creek	FY 2006/07
Dominguez Channel-LA/LB Harbor	FY 2007/08
Santa Monica Bay	FY 2008/09

NPDES permits in the Los Angeles Region are organized and scheduled by watershed. This workload must be integrated with that required under backlog reduction efforts or other regulatory or legislative requirements. Preliminary "State of the Watershed Reports" are prepared by watershed "teams" composed of permit writers, planning, TMDL, and nonpoint source program personnel, and those involved with groundwater protection.

The Watershed Management Initiative Chapter

This document is the seventh iteration of what we call our "Chapter" which is our Region's chapter of the integrated WMI document for the whole state. The participants in implementation of the WMI in California (the nine Regional Boards, State Board, and USEPA) were asked in 1996 to begin preparation of a document which identified priorities and resource needs, across programs, in a watershed context. The Chapter is currently used both as an outreach and as a planning tool to identify the Region's priorities, as well as where we need additional resources. The Chapter is organized into sections including the Introduction, Watershed Sections, and Region-wide Section. Included in each Watershed Section is an overview of that watershed, a description of its water quality concerns and issues, past significant Regional Board activities in the watershed, current (funded) activities, near-term (usually unfunded) activities that would benefit the watershed, and activities which may happen on a longer time-scale (usually unfunded). The Region-wide Section includes a description of activities not easily associated with particular watersheds.

Programs and Funding Under WMI

Programs covered under WMI include core regulatory (e.g., NPDES), monitoring and assessment, basin planning and water quality standards, watershed management, wetlands, TMDLs, 401 certifications, groundwater (as appropriate), and nonpoint source management activities (many of these programs also have region-wide components). It turns out most of our highest priority needs fall into areas that have little to no funding. Areas with particular shortages include nonpoint source management , CEQA review, monitoring and assessment, basin planning, 401 certifications, stormwater, and more than minimal work on NPDES pretreatment, enforcement, compliance, and monitoring report review. A majority of any additional monies that may become available would be dedicated to these programs in the targeted watersheds (then non-targeted watersheds) as well as allocated to upcoming TMDLs occurring throughout the Region. This watershed effort, which itself has consumed a lot of limited staff resources, will hopefully result in resource flexibility and augmentation to address these deficiencies.

Integration of Multiple Mandates Under WMI

While the Watershed Management Initiative strives to integrate and coordinate the various Regional and State Board programs and address the highest priority funding needs for those programs, there is also need to respond to and accommodate priorities established by the individual Regional and State Boards' members, priorities established prior to the WMI which run on their own timelines, legal or legislative mandates, or other new mandates which may affect the way the WMI is implemented in a Region. It is important to re-state here that the WMI is not a new program but rather a way to describe our approach to integrating existing and newly evolving programs and mandates.

For example, a high priority statewide mandate is management of nonpoint source pollution. High priority Regional Board activities include implementation of an effective enforcement strategy, development of a septic tank policy initiative, development and implementation of a strategy to assess nonpoint source loadings, TMDLs, and better communication and coordination of Board programs and policies through improved outreach. More information is included in the Introduction of the full chapter. It is clear many of the Regional Board high priority activities are of primary importance in fulfilling not only the WMI but also the nonpoint source management initiative and other mandates.

However, some mandates present challenges to fully implementing watershed management. These include recent USEPA, State Board, and legislative requirements for reducing permit backlog, conflicts with the timing of scheduled TMDLs, lengthy delays incurred by the public processes e.g., hearings, workshops), ands insufficient funding or staff.

SUMMARY OF SIGNIFICANT WATERSHED ISSUES

The Region encompasses ten Watershed Management Areas (WMAs) which are the geographically-defined watershed areas where the Regional Board implements the watershed approach. These generally involve a single large watershed, within which exists smaller subwatersheds. However, in some cases they may be an area that does not meet the strict hydrologic definition of a watershed (e.g., several small Ventura coastal waterbodies in the region are grouped together into one WMA). Watersheds in the strictest sense are geographic areas draining into a river system, ocean or other body of water through a single outlet and includes the receiving waters. They are usually bordered, and separated from other watersheds, by mountain ridges or other naturally elevated areas.

Many of the watersheds in this Region range over large areas that are highly diverse. A Designated Wilderness Area may occur in one part of a watershed while extensive development dominates another part and possibly agriculture in yet different area of the watershed. This fact results in a great diversity of issues of concern to this agency in any particular watershed with the concomitant need to balance priorities among existing stakeholders. The following summarizes significant watershed issues in our watershed management areas. More detail may be found by consulting the full version of the WMI Chapter

Watershed Management Areas
Significant Watershed Issues

1) Los Angeles River Watershed

- Seven major NPDES discharges (five POTWs)
- 23 minor individual permits
- 114 discharges covered by general permits
- Industrial storm water – 1,336 discharges
- Construction storm water - 456 discharges
- Nitrogen and coliform contributions from septic systems
- Other nonpoint sources (horse stables, golf courses)
- Cross-contamination between surface and groundwater
- Protection and enhancement of fish and wildlife habitat and recreational areas
- Removal of exotic vegetation
- Balancing removal of vegetation for flood control with the need for urban habitat
- Attaining a balance between water reclamation and minimum flows to support habitat
- leakage of MTBE from underground storage tanks
- Contaminated sediments within the LA River estuary
- 107 impairments including: nitrogen, trash, selenium, other metals, coliform, PCBs, historic pesticides, chlorpyrifos
- Completed TMDLs: trash (2001), nutrients (2004)
- Currently scheduled TMDLs: metals FY04/05; historic pesticides FY07/08; bacteria FY07/08

2) San Gabriel River Watershed

- Six major NPDES discharges (four POTWs)
- 18 minor individual permits
- 55 discharges covered under general permits
- 606 discharges covered by the industrial storm water permit
- 247 discharges covered by the construction storm water permit
- Sluicing and disposal of sediments from reservoirs
- Protection of groundwater recharge areas
- Ambient toxicity
- Excessive trash in recreational areas of upper watershed
- Mining/stream modifications
- Extensive stream modification for mining and water reclamation
- Urban and storm water runoff quality
- Nonpoint source loadings from nurseries and horse stables
- Lack of understanding of estuary dynamics (e.g. salinity profile)
- Septic systems
- 47 impairments including: nitrogen and effects, trash, metals, historic pesticides, coliform, chlorides, PCBs
- Completed TMDLs: East Fork trash (2000)
- Currently scheduled TMDLs: metals FY05/06; toxicity FY06/07; nitrogen FY07/08

3) Los Cerritos Channel/Alamitos Bay WMA

- Three minor discharges
- Seven discharges covered under general permits
- 36 discharges covered by the industrial storm water permit
- 22 discharges covered by the general construction storm water permit
- Loss of wetlands habitat in Los Cerritos area
- Impacts from antifouling paint in marinas
- Urban and storm water runoff impacts on isolated water bodies
- Loss of tidal exchange
- 14 impairments including: ammonia, metals, historic pesticides and effects, PCBs, PAHs

4) The Channel Islands WMA

- Five islands
- One major discharger, four minor dischargers
- One discharge covered by general permit
- Five discharges covered by the industrial storm water permit
- One discharge covered by the construction storm water permit
- Areas offshore of islands designated as Areas of Special Biological Significance
- High quality marine and rocky intertidal habitat
- Heavy use by marine mammals and endangered species
- Impairment: coliform (Avalon Beach)
- Lack of information on water quality

5) Ventura River Watershed

- Eutrophication, especially in estuary
- TDS concerns in some subwatersheds
- One major discharge (POTW)
- Six discharges covered under general permits
- Industrial storm water – 37 discharges
- Construction storm water – 13 discharges
- Impediments (dams, diversions) to steelhead trout migration
- 15 impairments including: DDT, algae, coliform, low DO, diversions, selenium, other metals, trash

6) Miscellaneous Ventura Coastal WMA

- Four major NPDES discharges (one POTW), 9 minor individual permits, and 11 discharges under general NPDES permits
- Industrial storm water – 82 discharges
- Construction storm water – 92 discharges
- 21 impairments

The harbors

- Accumulation of metals, PCBs, and historic pesticides in sediment and tissue
- Considerable marine life subject to impacts
- Impairments: DDT, PCBs, PAHs, metals, TBT, coliform
- Currently scheduled TMDLs: pesticides FY08/09 and coliform FY08/09

The wetlands and coast

- Historic pesticide contamination
- Loss of quality habitat
- Impacts from oil spills and agriculture
- Use by endangered species
- Impairments: historic pesticides and effects, coliform
- Completed TMDLs: McGrath Beach coliform (2003)

7) Santa Clara River Watershed

- High quality natural resource
- Four major NPDES discharges (POTWs)
- 11 minor individual discharges
- 15 discharges covered under general permits
- Industrial storm water – 144 dischargers
- Construction storm water – 317 dischargers
- Impacts from exotic vegetation
- Impacts from agriculture
- Increasing urbanization, flows, and channelization in upper watershed; impacts on middle and lower watershed
- 36 impairments including: nitrogen and effects, salts, coliform, trash, historic pesticides
- Completed TMDLs: chloride (2003); nutrients (2004)

8) Calleguas Creek Watershed

- Five major NPDES discharges (POTWs)
- Six minor individual discharges
- Thirteen discharges covered under general permits
- Industrial storm water – 73 dischargers
- Construction storm water – 276 dischargers
- Highly modified watershed
- Impacts from agriculture and naval facility
- Sediment inputs to Mugu Lagoon, one of the largest wetlands in southern California
- Competing urban uses; development pressures, particularly in upper watershed
- Severe lack of benthic and riparian habitat in watershed
- 163 impairments including: nitrogen and effects, water-soluble pesticides and effects, salts, historic pesticides, PCBs, siltation, selenium, mercury, other metals, trash
- Completed TMDLs: chlorides (2002); nutrients (2003)
- Currently scheduled TMDLs: organics FY05/06; metals FY06/07

9) Dominguez Channel/LA-LB Harbor WMA

- Nine major NPDES discharges: one POTW, two generating stations, five refineries (five Channel discharges, four Harbor discharges)
- 48 minor individual permits (22 Channel, 26 Harbor)
- 60 discharges covered by general permits (38 Channel, 22 Harbor)
- Industrial storm water – 399 discharges
- Construction storm water – 134 discharges
- Historical deposits of DDT and PCBs in sediment
- Discharges from POTW & refineries
- Spills from ships and industrial facilities
- Leaching of contaminated groundwater
- Stormwater runoff
- 86 impairments including: metals, PCBs, PAHs, historic pesticides, coliform, trash, nitrogen
- Currently scheduled TMDLs: LA Harbor coliform FY04/05

10) Santa Monica Bay WMA

- Key recreational resource (beaches)
- Seven major NPDES discharges: three POTWs, one refinery, and three generating stations
- 21 minor discharges
- 158 discharges covered by general permits
- Industrial storm water – 87 discharges
- Construction storm water – 220 discharges
- 249 impairments including: mercury, selenium, other metals, historical pesticides, PAHs, PCBs, nitrogen, coliform, trash, TBT, habitat alteration, exotic vegetation, salts

Coastline

- Acute health risk associated with swimming in runoff-contaminated surfzone waters
- Chronic risk associated with consumption of seafood in areas impacted by DDT and PCB contamination
- Reduction of loadings from the two major POTWs in light of projected population increases
- Other impacts from urban runoff/storm water
- Historic deposits of DDT and PCBs in sediment
- Loadings of pollutants from other sources: sediment resuspension, atmospheric deposition
- The need to have a better understanding of the Bay's resources
- Completed TMDLs: Santa Monica Bay beaches coliform (2003)
- Currently scheduled TMDLs: organics FY06/07

Malibu Creek Watershed

- Excessive freshwater, nutrients, and coliform in lagoon; contributions from POTW and other sources
- Urban runoff from upper watershed
- Impacts to swimmers/surfers from lagoon water
- Septic tanks in lower watershed
- Appropriate restoration and management of lagoon
- Access to creek and lagoon by endangered fish
- Completed TMDLs: Malibu Creek nutrients and coliform (2003)
- Currently scheduled TMDLs: organics FY08/09

Ballona Creek Watershed

- Trash loading from creek
- Wetlands restoration
- Sediment contamination by heavy metals from creek to Marina del Rey Harbor and offshore)
- Sediment contamination by heavy metals and trace organics within Ballona Creek Entrance Channel
- Toxicity of both dry weather and storm runoff in creek
- High bacterial indicators at mouth of creek
- Completed TMDLs: Ballona Creek trash (2001); Marina del Rey coliform (2004)
- Currently scheduled TMDLs: Ballona Creek metals & organics FY04/05; Ballona Creek coliform FY06/07

SUMMARY OF REGIONWIDE ACTIVITIES

There are many activities conducted at the Region which do not apply to a specific watershed; instead they represent ongoing regionwide strategies and policies, or programs which are not directly linked to the rotating watershed cycle. Also, statutory, regulatory, or funding requirements may dictate completion of some activities at odd intervals throughout the five-year watershed cycle (such as increased emphasis on pretreatment inspections). The table below gives examples of watershed versus non-watershed related activities.

Watershed Tasks	*Non-Watershed Tasks*
Renew permits	Issue new permits
	Develop new general permits, reduce backlog, pretreatment
Integrate municipal storm water program	Issue individual industrial and storm water permits
Conduct inspections for watershed permits	Conduct inspections on new permits
Enforcement (in-cycle compliance)	Enforcement (spills, out of cycle compliance)
Implement NPS controls	Develop regional strategies to address NPS problems
TMDL/WLAs	
Develop, coordinate and implement watershed monitoring	Coordinate monitoring on a regional scale
Water Quality Assessments (State of the Watershed Reports, partial updates to 305(b) by watershed)	Biennial 305(b) Reports to USEPA
Develop watershed policies	Develop regional policies
Watershed-specific Basin Plan Updates	Regional Basin Plan Updates, Triennial Reviews
Data management (input and use by watershed)	Regional Database management
GIS (input of watershed-specific layers and information)	GIS (development and input of regional layers and Maintenance of system)
Watershed-specific outreach/education	General outreach education
Incorporation of CEQA and 401 Decisions into watershed planning (as groups are formed, and as timing permits)	Timely review of CEQA documents, 401 certifications per statutory deadlines

While the Watershed Management Initiative strives to integrate and coordinate the various Regional and State Board programs and address the highest priority funding needs for those programs, there is also need to respond to and accommodate priorities established by the individual Regional and State Boards' members, priorities established prior to the WMI which run on their own timelines, or other new mandates which may affect the way the WMI is implemented in a Region. The following briefly describes our overall approach to implementing a subset of programs (some statewide mandates) and other Board priorities on a regionwide scale.

Core Regulatory – General Permits

There are many dischargers in this Region covered by general permits for discharges to surface water through a letter issued by the Executive Officer. This activity occurs independent of the watershed cycle as the need arises. Many of these are for short-term projects such as dewatering. 40 CFR §122.28 provides for issuance of general permits to regulate a category of point sources if the sources: a) involve the same or substantially similar types of operations, b) discharge the same type of waste, c) require the same type of effluent limitations or operating conditions, d) require similar monitoring, and e) are more appropriately regulated under a general permit rather than individual permits.

Core Regulatory – Storm Water Permits

Storm water activities include those involving the three municipal permits (and Standard Urban Storm Water Mitigation Plans associated with the two urban ones) in the Region, the approximately 2700 facilities regulated under the State's general industrial permit, and the approximately 950 construction sites regulated under the State's general construction permit.

Wetlands Protection and Management – Water Quality Certification

A key wetlands regulatory tool for the Regional Board is the CWA Section 401 Water Quality Certification Program which regulates discharges of dredge and fill materials to waters. The 401 certification program is one of the most effective tools the state has for regulating hydrologic modification projects, especially those which directly impact the region's diminishing acres of wetlands and riparian habitat.

Key program activities should include CEQA documents review/response, pre-construction meetings with applicants, site visits, application processing, follow-up monitoring and inspections, and enforcement. Unfortunately, the program is currently severely underfunded with only application processing being undertaken.

Approximately 150-200 applications are processed each year. Information about projects and the program in general is available on the Regional Board website at http://www.waterboards.ca.gov/losangeles.

Management of Nonpoint Source Pollution

Management of NPS pollution is based upon the requirements of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act, Division 7 of the California Water Code, establishes a comprehensive program for the protection of water quality and beneficial uses of the State's waters and makes explicitly clear the law applies to nonpoint as well as point source discharges. The Porter-Cologne Act also establishes the administrative permitting authority—in the form of Waste Discharge Requirements (WDRs), waivers of WDRs or basin plan prohibitions—to be used to control NPS discharges. Additional legislative requirements state that all waivers must be conditional, they are to be re-evaluated and subsequently reissued every five years, and the RWQCBs must require compliance with waiver conditions.

California's Nonpoint Source (NPS) Pollution Control Program has been in effect since 1988 and was updated in January, 2000. In August 2004 the Office of Administrative Law approved the NPS Policy. The policy supersedes certain elements of the NPS Program Plan and formally eliminates the "three-tiered approach" in informal use.

Our long-term goal for the NPS program is to improve water quality by implementing the management measures identified in *the California Management Measures for Polluted Runoff Report (CAMMPR)* by 2013.

Major current nonpoint source program priorities are: 1) oversight of workplans for grant-funded projects, 2) establishment of regional strategies to address agriculture, marinas, and septic tanks (the latter will be focused on densely populated communities and areas where ground water is a source of drinking water), 3) investigation of loading contributions from agriculture, nurseries, golf course, and horse stables (in aid of TMDL work), and 4) expansion of our public education and outreach.

Enforcement Strategy

The statewide Water Quality Enforcement Policy adopted by State Board in 1996 and revised in 2002 is intended to make all enforcement consistent, predictable, and fair throughout the state. The Regional Board adopted a resolution in 1997 which confirmed the Regional Board's desire to carry out enforcement in a manner consistent with State Board's enforcement policy and that Regional Board staff prepare a regional enforcement strategy consistent with State Board's enforcement policy. .

The enforcement policy states that the Regional Board staff must bring to the attention of their Regional Board for possible enforcement action, at a minimum, an array of permit violations for a variety of dischargers as well as failure to submit reports or deficient reports, and spills. Our increased efforts have resulted in an improved enforcement record for the region and has contributed to increased compliance in some programs (e.g. industrial stormwater). The quarterly violations report is available to the public as part of the Executive Officer's Report; and is also available on the Board's web page.

Beaches/Coastal Watersheds Activities

Due to the great resource and economic value associated with the beaches and coastal watersheds of this Region, a number of activities occur that are specific to the coastal areas. Among these are a number of monitoring programs as well as a program to manage contaminated sediments. Monitoring programs include: several regional surveys of the Southern California Bight which evaluated a number of constituents to determine the spatial extent and magnitude of ecological disturbances, the Surface Water Ambient Monitoring Program (SWAMP).

Additionally, a Contaminated Sediments Task Force has been established to develop a long-term strategy to manage contaminated sediments found in the ports and marinas of Los Angeles County. This five-year effort was funded by the Karnette bill (SB 671) beginning in FY97/98.

FOR ADDITIONAL INFORMATION

Contact the Regional Board's Watershed Coordinator, Shirley Birosik, at (213) 576-6679 or sbirosik@waterboards.swrcb.ca.gov for additional information or consult the Regional Board's website at http://www.waterboards.ca.gov/losangeles.

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Section 1 . INTRODUCTION

THE REGIONAL WATER QUALITY CONTROL BOARD - WHY THE WATERSHED MANAGEMENT APPROACH?

The nine Regional Water Quality Control Boards (Regional Boards) are each semi-autonomous and comprised of up to nine part-time Board Members appointed by the Governor. Regional Board boundaries are primarily based on watersheds. Each Regional Board makes water quality decisions for its region. These decisions include setting water quality standards, issuing waste discharge permits, adopting policies, and taking enforcement actions.

The Los Angeles Region has jurisdiction over all coastal drainages flowing to the Pacific Ocean between Rincon Point (on the coast in western Ventura County) and the eastern Los Angeles County line, as well as the drainages of five coastal islands (Anacapa, San Nicolas, Santa Barbara, Santa Catalina, and San Clemente). The Regional Board's jurisdiction also includes all coastal waters within three miles of the continental and adjacent island coastlines.

The Los Angeles Region is the State's most densely populated and industrialized region. Over 1,000 discharges of wastewater from point sources in this Region are regulated by the Los Angeles Regional Board. Over 700 of these point source discharges are discharged to surface waters, and are regulated under the National Pollutant Discharge Elimination System. Permits issued under this program are referred to as NPDES permits. In addition, the Regional Board prescribes Waste Discharge Requirements (WDRs) for the remaining discharges, which are primarily to ground waters and landfills.

In recent years, watershed issues have become much more complex and has resulted in the need to respond with more coordinated monitoring and solutions for water quality problems. The increased emphasis on TMDL development has resulted in the need for more cumulative assessments of pollutant loadings to waterbodies and impacts to beneficial uses. This requires acknowledgment of the growing importance of nonpoint sources to watershed pollutant loadings. And recognizing the value of stakeholder group involvement in solving watershed problems.

Managing water quality by watershed, as much as possible within program funding constraints, allows the Los Angeles Regional Board to address these varied demands in a more coordinated and effective manner. The control of point source pollutants through NPDES permits and WDRs is central to the Los Angeles Regional Board's strategy to protect water quality; participation in watershed stakeholder groups, and active solicitation of their involvement in TMDL, permit, and nonpoint source activities, and awarding of grant monies, allow for additional coordination.

THE WATERSHED MANAGEMENT INITIATIVE

Watershed management is not a new program, nor a program at all--it is a strategy for integrating and managing resources, both human and fiscal. The goal of the state's Watershed Management Initiative (WMI) is to integrate water quality monitoring, assessment, planning, standards, permit writing, nonpoint source management, ground water protection, and other programs at the State and Regional Boards as much as practicable to promote a more coordinated and efficient use of personnel and fiscal resources while ensuring maximum water quality protection benefits. The State's watershed work integrates and supports, to the extent possible, local community watershed protection efforts to implement cost-effective strategies for natural resource protection. As characteristics and resources vary widely from watershed to watershed, this approach customizes efforts to manage resources and address problems unique to each watershed while offering stakeholders the opportunity to implement the most cost-effective solutions to problems within their watersheds.

Watershed management represents a shift from a traditional approach that focuses on regulation of point sources, to a more regional approach that acknowledges environmental impacts from other activities. Over the last twenty-five years, permitting programs have significantly reduced pollutants that are discharged to California's waters from point sources. However, the quality of many waters continues to be degraded from pollutants discharged from diffuse sources, referred to as nonpoint sources, and from the cumulative impacts of multiple point sources. Future success in reducing pollutants from nonpoint sources and achieving additional cost-effective reductions in pollutants from point sources requires a shift to a more geographically-targeted approach. Activities particularly amenable to a rotating cycle include monitoring, reporting, and water quality assessments.

THE WATERSHED MANAGEMENT INITIATIVE CHAPTER

This document is the seventh iteration of the Chapter. The participants in implementation of the WMI in California (the nine Regional Boards, State Board, and USEPA) were asked in 1996 to begin preparation of a document which identified priorities and resource needs, across programs, in a watershed context. The Chapter is primarily used as an information and outreach tool to describe the Regional Board's watersheds and their major water quality issues, as well as, describe the Board's program responsibilities in aid of program workplan development and grant applicants needs. This also allows for highlighting where priorities are poorly funded in this Region and can be in support of requests for additional resources through Budget Change Proposals. It turns out many of our highest priority needs fall into areas that have little to no funding. This effort will hopefully result in flexibility and augmentation to address this deficiency.

The Chapter itself is not a commitment to complete work but provides a framework to identify priorities and resource needs which should form the basis for formal commitments which are made in fund source- and program-specific Workplans on an annual basis. Determinations of which activities will be funded by specific Workplans may be negotiated on the basis of the information in the Chapters. Annual program Workplans and grant applications will still be prepared by program managers to identify which activities are going to be funded in a particular year based on the fiscal decisions made.

And, although the Chapter identifies specific projects or types of projects we would like to see funded through grant programs, these are not complete or exclusive lists. At the heart of any request for funding from a grant program should be a proposal to solve (or get to the solution of) water quality problems identified in this Chapter as high priorities; doing so in the context of watershed management is both desirable and, increasingly, a requirement of many grant programs.

The Chapter is organized into sections including the Introduction, Watershed Sections, and Region-wide Section. Included in each Watershed Section is an overview of that watershed, a description of its water quality concerns and issues, past significant Regional Board activities in the watershed, current (funded) activities, near-term (usually unfunded) activities that would benefit the watershed, and activities which may happen on a longer time-scale (also usually unfunded). The Region-wide Section includes a description of activities not easily associated with particular watersheds as well as more detailed information on implementation of certain programs (such as nonpoint source) in the Region. The Appendix includes lists of permits organized by watershed. More detailed information on allocation of resources may be obtained by request from the Regional Board.

WMI DEFINITIONS

The following represent commonly used terms and definitions utilized throughout the document:

A **watershed** is the geographic area draining into a river system, ocean or other body of water through a single outlet and includes the receiving waters. Watersheds are usually bordered, and separated from other watersheds, by mountain ridges or other naturally elevated areas.

The **watershed management approach** is the specific method by which the Regional Board implements watershed management. Features include the targeting of priority problems, stakeholder involvement, developing integrated solutions, and evaluating measures of success. The entire watershed, including the land mass draining into the receiving water, is considered.

Watershed Management Areas (WMAs) are the geographically-defined watershed areas where the Regional Board will implement the watershed approach. These generally involve a single large watershed within which exists smaller subwatersheds but in some cases may be an area that does not meet the strict hydrologic definition of a watershed e.g. several small Ventura coastal waterbodies in the region are grouped together into one WMA.

State of the Watershed/Water Quality Characterization Reports are reference documents produced by Regional Board staff that describe the existing water quality conditions, data gaps, and sources of pollutants within a WMA. Strategies to resolve the water quality concerns, either in progress or proposed, are described. Preliminary versions of these reports are produced by the Regional Board in order to stimulate discussion and inputs on issues from other stakeholders. These documents will be updated as needed. First edition reports are available for Calleguas Creek, Santa Monica Bay, Los Angeles River, San Gabriel River, and Ventura River Watersheds.

A **Watershed Management Plan** is a planning document often produced by watershed stakeholder groups which addresses water quality, land use, economic, habitat, recreation, and other concerns and recommends specific management strategies to resolve identified problems in a cooperative and coordinated manner. Few of these existed prior to 2000. Grants recently awarded under Proposition 13 to develop watershed management plans are beginning to fill in the gaps.

Nonpoint sources of pollution are those with no single point of origin. Pollutants may often be carried off the land by stormwater or be part of urban runoff. Common nonpoint sources are agricultural, urban (runoff from residential areas, parking lots, streets, etc.), and construction activities. **Point sources**, on the other hand, by definition originate from a discrete source such as a pipe or outfall through which a facility may discharge while regulated by a NPDES permit.

Beneficial uses are those uses of water identified in state and regional water quality control plans that must be achieved and maintained. Uses include contact water recreation, municipal water supply, navigation, agricultural supply, wildlife habitat, and groundwater recharge, among others. **Designated** beneficial uses, together with water quality objectives, form water quality standards as mandated under the California Water Code and Federal Clean Water Act.

The California Water Code defines **water quality objectives** as "the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial

uses of water or prevention of nuisance within a specific area." These objectives are both narrative (descriptive) and numerical and appear in each Regional Board's water quality control plan (**Basin Plan**) which also describes implementation programs to protect all waters in the Region.

Best Management Practices (BMPs) are intended to reduce the amount of pollutants and prevent pollutants from leaving a facility and reaching a waterbody. BMPs include good facility housekeeping methods and such things as scheduling certain types of work around periods of rainfall or high winds, controlling runoff from a facility and modifying practices to reduce the possibility of pollutants leaving a facility. These are often used in regulating stormwater and other nonpoint sources.

The **Total Maximum Daily Load (TMDL)** is a number that represents the assimilative capacity of a receiving water to absorb a pollutant. The TMDL is the sum of the individual wasteload allocations for point sources, load allocations for nonpoint sources plus an allotment for natural background loading, and a margin of safety. TMDLs can be expressed in terms of mass per time (the traditional approach) or in other ways such as toxicity or a percentage reduction or other appropriate measure relating to a state water quality objective. A TMDL is implemented by reallocating the total allowable pollution among the different pollutant sources(through the permitting process or other regulatory means) to ensure that the water quality objectives are achieved.

- **TMDLs** establish the loading capacity of a watershed, identify needed reductions, identify sources, and recommend allocations for point and nonpoint sources.

- The **Margin of Safety** is a required component of the TMDL that accounts for the uncertainty about the relationship between the pollutant loads and the quality of the receiving waterbody.

- **Grouping TMDLs** is a reasonable and logical way to collapse the total number of individual TMDLs to make the most effective use of resources we currently have and any which we may obtain in the future. This is largely due to the fact that some of the "pollutants" for which a water may be listed are actually "effects" of pollutants. The TMDL chart in each watershed section of this report reflects this collapsed approach. For example, many reaches of the Los Angeles River are listed for ammonia. Some of the same reaches are listed for pH problems while other reaches are listed for algae, scum, and odors. It is very likely the presence of these "pollutants" are interrelated. Excessive nitrogen (reflected here as high levels of ammonia) may lead to a condition of eutrophication (excessive nutrient loading) which can influence pH levels as well as promote increased algal growth. Scum may be evident due to floating algal material and odors may result when excessive algae starts to die off. Thus, it makes sense to group these approximately 95 TMDLs (calling it a "nitrogen and related effects" TMDL "group") and approach the problem by determining the sources of nitrogen loading into the watershed and the appropriate allocations in order to reduce loadings.

OVERVIEW OF ONGOING REGIONAL BOARD PROGRAMS AND ACTIVITIES

The Regional Board implements a wide variety of programs with different mandates, requirements, etc. Many of these (primarily surface water programs) are already fully or partially integrated into the watershed approach; others (primarily ground water) may be incorporated later and a few will likely remain separate from the WMI process. The following gives a brief description of these major program areas, current priority activities for each, and whether they are considered Category One or Two activities. **Category One** activities are those of high priority which are required by federal or state statute or regulation that need to be completed at least once during the 5-year planning cycle. **Category Two** activities are considered very important but are not required by statute or regulation. Additionally, more specific program objectives and implementation activities are included in the watershed or region-wide sections as appropriate. Updated information on Regional Board activities and programs may be also found on the Board's webpage at http://www.waterboards.ca.gov/losangeles.

SURFACE WATER

***Core Regulatory* (Category One)**

Core regulatory activities include NPDES (individual permits - updates and revisions, issuance of general permits, stormwater permits/program, enforcement actions, response to complaints, compliance and pretreatment inspections, pretreatment audits, and review of monitoring reports), groundwater protection activities (issuance of Waste Discharge Requirements), issuance of Water Reclamation Requirements, and land disposal under Chapter 15 California Code of Regulations. Issuance of new permits continues to be a high priority. Reduction of backlog and increased efforts in compliance and enforcement are also very high priorities. Permits are scheduled for reissuance to coincide with targeted watersheds on a rotating schedule of five years. Major NPDES permittees are inspected at least once annually while those in Significant Noncompliance are inspected at least quarterly until the noncompliance issue is resolved. Minor NPDES permittees are inspected at least once in each permit reissuance cycle (20% of the total per year). Those in noncompliance will be inspected annually until the problem is resolved.

An ongoing focus in core regulatory is on reducing and preventing backlogs, increasing inspections, and increasing our emphasis on pretreatment. Our watershed efforts will focus on coordinating receiving water monitoring and implementing bioassessment. Storm water will put an increased emphasis on compliance inspections and enforcement.

Core regulatory must also implement waste load allocations established by TMDLs during renewal of existing permits or issuance of new permits.

***Monitoring and Assessment* (Categories One and Two)**

Category One activities include the biennial Water Quality Assessment 305(b) Report, the Surface Water Ambient Monitoring Program (SWAMP), and Los Angeles Basin Contaminated Sediment Task Force work. Category Two activities include involvement with special studies (e.g., Bight'94, Bight'98, and Bight'03 regional surveys) and volunteer monitoring. Participation with the State Mussel Watch/Toxic Substances Monitoring/Coastal Fish Contamination Programs (SMW/TSMP/CFCP) were former Category Two activities; these programs have been assimilated into SWAMP.

Monitoring and/or assessment efforts are occurring on both regional and watershed scales. The Los Angeles Basin Contaminated Sediment Task Force and Regional Board ambient monitoring through the SWAMP are the major regional monitoring and/or activities with direct coordination provided by Regional Board staff (SWAMP and the Contaminated Sediment Task Force are described in more detail in the Region-wide Section of this document while activities specific to each watershed are described in the appropriate watershed sections). Also, every two years an update of the 305(b) report is required; emphasis will be put on updating targeted watersheds at those times but all data received will be evaluated. The next update is scheduled for 2004 and is currently underway.

Monitoring can have a number of goals. It may be used to assess trends over time and obtain general assessment information on a regional scale. It may be used to pinpoint "hot spots" and track sources on a watershed scale. It may also be used to assess loadings for TMDLs. An increasing use will be to better judge impairments of beneficial uses on a watershed scale and to assess effectiveness of nonpoint source BMPs and other water quality improvement strategies.

A major long-term monitoring and assessment goal is to increase utilization of biological assessments including incorporating them in monitoring requirements for dischargers.

Basin Planning and TMDLs (Categories One and Two)

Category One basin planning activities include conducting triennial reviews of planning priorities, development of water quality standards and implementation plans and policies, development of TMDLs, and preparation of Basin Plan amendments (some of which follow from development of TMDLs).

A triennial review is a fundamental planning function at Regional Boards. This activity provides the Board with the opportunity to review the status of water quality, identify issues and problems, and solicit direction and comment from concerned parties as well as the public in general. The triennial review process sets the stage for possible changes (i.e. amendments) to the Basin Plan, which may be needed to more effectively protect water quality. Amendments to the Basin Plan also ensure that the Regional Board's approach to protecting water quality is legally sound. The next triennial review is scheduled for 2004.

There are 743 total reach/constituent impairments; TMDLs will be completed on the approximately 95 grouped impairments. About eleven percent of the impairments are based on excessive indicator bacteria while historic DDT and PCBs contribute to somewhat lesser numbers of impairments (9% and 7.5%, respectively).

Another important planning function is interaction with the public and other agencies that are planning projects that may impact the environment. Under the California Environmental Quality Act, the Regional Board has an opportunity and responsibility to work with the public to ensure projects that may affect water quality are properly designed to reasonably mitigate adverse impacts. This responsibility to participate in the planning processes at other agencies extends to the development of regulations (such as the California Toxics Rule and State Implementation Policy) and guidelines (such as irrigation practices). Review of environmental documents is a Category Two activity.

Wetlands Protection and Management *(Categories One and Two)*

Wetlands acres in the Region have diminished greatly over the past several decades as coastal development, in particular, has increased. Wetlands provide habitat, serve to slow down water flow, decrease total volume through infiltration, and filter out a number of pollutants through active uptake by plants as well as deposition in sediments. Wetlands such as coastal estuaries are a buffer zone between ocean and inland water resources and are heavily utilized by aquatic organisms. Continuous stretches of riparian habitat function as wildlife corridors to allow animal movement between increasingly isolated populations. They also serve as popular recreational destinations for residents and visitors. Unfortunately, many of our Region's wetlands are impacted by varying kinds and amounts of pollutants and alterations.

The Regional Board participates in the Southern California Wetlands Recovery Project (WRP), which for the first phase effort, conducted an inventory of coastal wetlands from Santa Barbara to the U.S.-Mexico border. This inventory included information on twelve wetlands in seven watersheds for our region. When compared to estimated historical acreages, Los Angeles County has lost 93% of its wetlands while Ventura County has lost 58% of its wetlands. A regional wetland plan and strategy for prioritizing and restoring sites has been developed. Currently, the Project funds wetlands projects which involve planning, restoration, or acquisition. More information about the Project may be found on its webpage at http://www.coastalconservancy.ca.gov/scwrp.

Our wetlands regulatory tools include:

1. **Wetlands beneficial use designation**: The Region's Basin Plan includes a beneficial use category for Wetland Habitat.

2. **Water Quality Objective**: The Region's Basin Plan has a narrative objective for wetlands protection which addresses the protection of hydrologic conditions and physical habitats to sustain the functional values of regional wetlands.

3. **Water Quality Certification (401) Program**: A key Category One activity associated with wetlands protection and management is CWA Section 401 certification which regulates discharges of dredge and fill materials to waters. The 401 certification program is one of the most effective tools the state has for regulating hydrologic modification projects, especially those which directly impact the region's diminishing acres of wetlands and riparian habitat.

Nonpoint Source Program *(Categories One and Two)*

Nonpoint source Category One activities include coordination of 319(h) grant project activities; and implementing the Plan for California Nonpoint Source Pollution Control Program, TMDLs, and Coastal Zone Act Reauthorization Amendments provisions. Participation in stakeholder/watershed groups meetings and activities and public/agency outreach are Category Two activities.

Management of NPS pollution is based upon the requirements of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act, Division 7 of the California Water Code, establishes a comprehensive program for the protection of water quality and beneficial uses of the State's waters and makes explicitly clear the law applies to nonpoint as well as point source discharges. The

Porter-Cologne Act also establishes the administrative permitting authority—in the form of Waste Discharge Requirements (WDRs), waivers of WDRs or basin plan prohibitions—to be used to control NPS discharges. Additional legislative requirements state that all waivers must be conditional, they are to be re-evaluated and subsequently reissued every five years, and the RWQCBs must require compliance with waiver conditions.

California's Nonpoint Source (NPS) Pollution Control Program has been in effect since 1988 and was updated in January, 2000. In August 2004 the Office of Administrative Law approved the NPS Policy. The policy supersedes certain elements of the NPS Program Plan and formally eliminates the "three-tiered approach" in informal use.

The NPS Program has also been upgraded to conform with the Clean Water Act Section 319 (CWA 319) and Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA). The lead State agencies for the NPS Program are the SWRCB, the nine RWQCBs, and the California Coastal Commission.

The Plan for California's Nonpoint Source Pollution Control Program includes requirements for Critical Coastal Area (CCA) designation. The intent of CCA designation is to direct needed attention to coastal areas of special biological, social, and environmental significance and to provide an impetus for these areas to receive special support and resources. These areas include Environmentally Sensitive Habitat Areas (ESHAs) currently designated in California's Coastal Zone Management (CZM) program, as well as areas adjacent to Areas of Special Biological Significance (ASBS), California's National Estuarine Research Reserves (NERRs), National Estuary Program (NEP), and National Marine Sanctuaries. The 2002 CCA Draft Strategic Plan identifies 101 CCAs statewide of which 13 are in the Los Angeles Region. These will be described further both in later sections of this document.

Our long-term goal for the NPS program is to improve water quality by implementing the management measures identified in the California Management Measures for Polluted Runoff Report (CAMMPR) by 2013. The short-term plan to achieve this goal is to identify, educate, and promote stakeholder involvement.

Current nonpoint source program priorities are: 1) oversight of workplans for 319(h) and bond fund projects, and 2) establishment of regional strategies addressing agriculture and marinas.

GROUND WATER

The following programs under our Groundwater Division are currently not managed under our watershed schedule. Over time, we expect to integrate aspects of these programs with other watershed activities, particularly with regard to coordination of monitoring and assessment activities and GIS. Steps taken to date include the mapping of drinking water wells and underground storage tank and Well Investigation Program (WIP) sites in a Geographic Information System (GIS).

Underground Storage Tanks Regulation and Remediation (Category One)

Responsibilities include oversight of investigations into groundwater pollution and any corrective actions which may be needed which result from leaking underground storage tanks. Cases are roughly organized along watershed boundaries.

SLIC Program (Category One)

Response to reports of unauthorized discharges, such as spills and leaks from above-ground storage tanks which may impact any of the region's waterbodies, are investigated through the Spills, Leaks, Investigation and Cleanup (SLIC) Program and remediation actions are implemented.

DOD and DOE Sites Cleanup Program (Category Two)

The Regional Board works with a number of other agencies involved with remedial investigation and cleanups at U.S. Department of Defense (DOD) and U.S. Department of Energy (DOE) sites. Agreements with the DOD and DOE provide for accelerated cleanups at military bases and other Defense sites schedule for closure.

Well Investigation Program (Category One).

Followup investigation of volatile organic compounds in public water supply wells is conducted through the Well Investigation Program (WIP). Investigations focus on identification and elimination of sources of pollutants in public water supply wells, the identification of responsible parties, and oversight of soil and ground water remediation. This program is somewhat watershed-based as it focuses on two areas – the San Gabriel and San Fernando Valleys – that fall within two watersheds, the Los Angeles River (upper) and Gabriel River Watersheds.

FUNDING

Many high priority (in terms of Regional Board as well as statutory priorities) activities are unfunded or underfunded. For example, monitoring and assessment, basin planning, and nonpoint source activities are grossly underfunded. Some resources must be utilized for required activities such as triennial Basin Plan reviews and Water Quality Assessments. The latter activity tells us where our impaired waters are and there are federal requirements to conduct TMDLs on 303(d)-listed waters although more money is needed to do TMDL work on the problem waters. If a TMDL is completed and a remediation strategy developed despite this, there is then little money for followup work, particularly with regards to dealing with nonpoint source contributions. This means that our involvement in nonpoint sources must be very time-conservative. While it may take years of work to cooperatively fix a nonpoint source problem, direct enforcement could take a lot less time and be an immediate action. However, the latter is contrary to the cooperative spirit of watershed management. Each watershed will require difference site-specific approaches depending on a variety of factors. Additionally, enforcement is another underfunded activity, particularly when dealing with nonpoint source discharges. On the other hand, priorities may shift due to the influx of "new" money to fund a previously underfunded, and often times, lower priority activity. Use of the new money may be specific to certain activities such as increased pretreatment inspections in

the core regulatory program. See Table 1 for the funding status and priority of Regional Board activities and programs in greater detail.

Table 1. Funding Status of Major Regional Board Activities and Programs

Program/Activity (and Subcategories)	Import-ance (High, Med, Low)	Man-dated?	Current Funding	What We Can Do With Existing Funds	What Could Be Done with More Funds
Basin Planning					
Triennial reviews	H	Y	*Under-funded*	*Delayed and/or limited Triennial Reviews*	*Conduct more regular comprehensive reviews of the Basin Plan and associated issues; act on an increased number of triennial review-listed items*
Evaluation of beneficial uses	H	Y	*Under- to unfunded*	*Field observations in conjunction with other activities, limited studies*	*Comprehensive beneficial use surveys on a more frequent basis(necessary to set and refine use designations)*
Development of WQ objectives	H	Y	*Under- to unfunded*	*Utilize existing objectives.*	*Develop new and/or site-specific objectives; participate on State/Federal Task Forces; develop regional policies for implementation of water quality standards*
Development of watershed/ regional priorities	H	N	*Under-funded*	*Solve the easiest problems*	*Development of complex watershed solutions*
Watershed Coordination and Plan Development					
Development of watershed plans	M	N	*Under to unfunded*	*Rely on stakeholders to do most of the work*	*Provide staffing better support to watershed groups to guide and prepare integrated plans for water quality along with flood protection, habitat protection, etc.*
Coordination	H	N	*Under-funded*	*Limited outreach*	*Provide staff to participate in all watershed groups*
TMDL Development	H	Y	*Under-funded*	*TMDLs with only the required elements in order to meet deadlines*	*More time spent developing TMDLs with site-specific information*

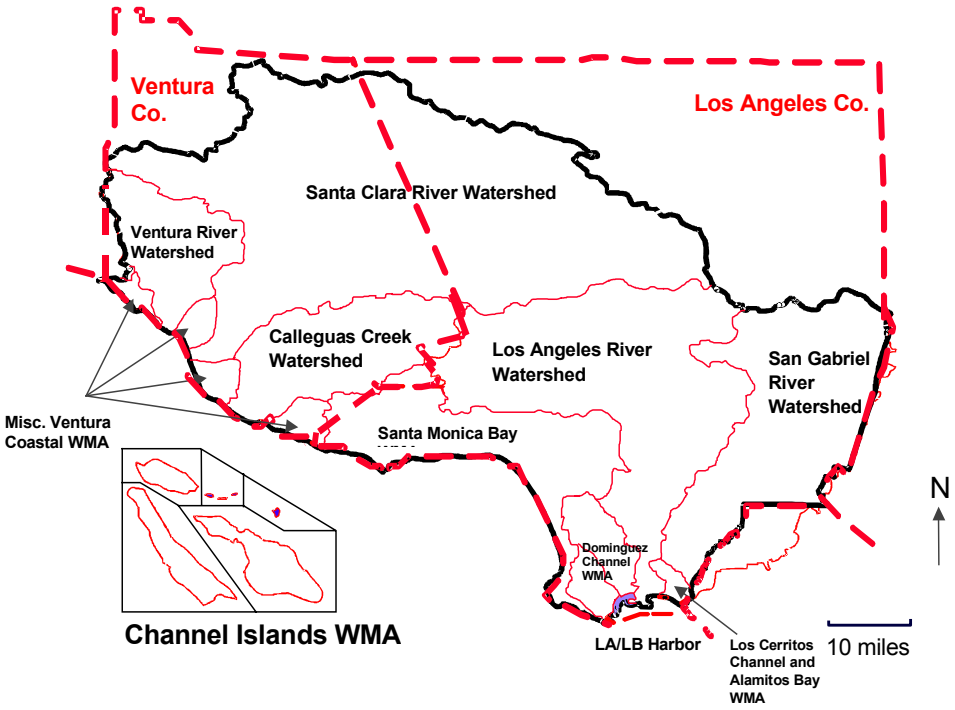
Program/Activity (and Subcategories)	Import-ance (High, Med, Low)	Man-dated?	Current Funding	What We Can Do With Existing Funds	What Could Be Done with More Funds
Water Quality Assessment					
Monitoring — Ambient watershed	H	Y (SWAMP)	*Under-funded*	*Do the basics required by the SWAMP; minimal staff sampling; rely on stakeholder sampling with minimal oversight; develop collaborative discharger watershed monitoring programs*	*Collect better data to assess impacts, assess for more constituents with more robust sampling; develop priorities, and evaluate successes; actively solicit and coordinate stakeholder monitoring; move beyond "snapshot" monitoring; advance special programs like biomonitoring/biocriteria*
Lab support	H	N/A	*Under-funded*	*Evaluate small subset of waters; analyze inexpensive constituents; often inadequate for decision-making*	*Collect and analyze for more constituents; have better datasets for decision-making*
Biomonitoring (training /field wk.)	H	N	*Under-funded*	*Use effluent chronic toxicity testing as surrogate*	*Real assessment of impacts to Beneficial Uses through field surveys, multiple assessment techniques*
Assessment	H	Y (WQA)	*Unfunded*	*Compile and assess as time permits ("back-burner")*	*Utilization as a critical element in watershed decision-making*
Computer data storage	M	N	*Unfunded*	*Data stored in many locations*	*More efficient and comprehensive analyses*
Analyze data	H	Y	*Unfunded*	*Simple statistics*	*More rigorous analyses*
State of watershed report	M	N	*Unfunded*	*Summarize available info*	*Info sharing/priority setting/better data collection and augmentation*
Biennial WQA Report	M	Y	*Unfunded*	*Limited to targeted watersheds (minimal info)*	*Regular and more comprehensive updates/ better data for quality decisions*
Reporting - *Water Quality Report Card*	M	N	*Unfunded*	*Encourage other groups to develop indicators that would be useful for our Region*	*Research and develop indicators and a "report card" format for Region*

Program/Activity (and Subcategories)	Import-ance (High, Med, Low)	Man-dated?	Current Funding	What We Can Do With Existing Funds	What Could Be Done with More Funds
CEQA Review	M-H	Y	*Unfunded*	*Limited to highest priority projects with the greatest potential impacts*	*Provide early, meaningful comments; pre-401 coord.; early notification; be aware of piecemealing of projects*
401 Review	M-H	Y	*Under-funded*	*Review and process applications*	*Follow-up work (monitoring and enforcement), pre-construction meetings, site visits, review of draft CEQA documents, development of regional policies*
Nonpoint Source/CZARA					
Outreach	H	N	*Under-funded*	*Minimal effort - usually associated with group meetings*	*More active cooperation and outreach with individuals and groups in the watershed*
Contract/Project Management	H	N	*Under-funded*	*Minimum needed to get project through funding process*	*Receive better products and leverage from successful projects, hands on involvement and advertisement of successful projects*
Development of NPS Solutions	H	Y	*Under-funded*	*Little to none on our own: some involvement with others' work, and initiation of regulatory mechanisms (Tiers II and III)*	*Work with watershed communities to develop and implement nonpoint pollution control strategies, evaluate success of best management practices and management measures*
Permitting - Point Source (NPDES and WDRs)					
Permit development	H	Y	*Under-funded*	*Reduce backlog; process major and minor permits on watershed schedule/transfer minor permits to general permits as time allows*	*Have resources to solicit more stakeholder involvement; use higher level tools (modeling) to develop limits;have more resources for increasingly complex permits*
Inspections	H	Y	*Under-funded*	*Minimum required*	*More field presence/outreach/may reduce need for enforcement*
Enforcement	H	Y	*Under-funded*	*Only high profile major spills/violations*	*More enforcement actions taken on spills/violations that are not high profile*
Spill/complaint follow-up	H	Y/N	*Under-funded*	*Only major spills*	*Better customer service, follow-up on complaints, successful cleanups*

OUR REGION'S APPROACH TO WATERSHED MANAGEMENT

We have designated ten watershed management areas in the Los Angeles Region (Figure 1). "State of the Watershed Reports" will be prepared or updated for the major watersheds. These reports have become very useful tools for local watershed groups for general educational value and in setting priorities.

Figure 1. Watershed Management Areas of the Los Angeles Region



Timeline for Watershed Management Initiative

Los Angeles River	FY 2004/05
San Gabriel River Los Cerritos Channel Channel Islands	FY 2005/06
Ventura River Misc. Ventura Coastal Santa Clara River Calleguas Creek	FY 2006/07
Dominguez Channel-LA/LB Harbor	FY 2007/08
Santa Monica Bay	FY 2008/09

The formation of a balanced group of stakeholders for each watershed is critical to the success of watershed management, especially for resolving issues arising from nonpoint source pollutants. Accordingly, part of our approach is to help initiate such groups of stakeholders and encourage active participation. Working in partnership with stakeholders, we expect that we can achieve the following goals (or have already done so during the watershed's first cycle) within each of our watershed management areas during the first five-year cycle of watershed management.

- **Establishment of a stakeholder group** or an infrastructure of stakeholder contacts which represents a range of key interest groups in the watershed but with involvement is not a barrier to timely resolution of a water quality problem.
- **Compilation of reasonably available water quality data** and related information in the form of a 'State of the Watershed Report.'
- **Assessment of data gaps** and a plan to fill the gaps.
- **Development of a** coordinated, cost-effective **watershed-wide monitoring program.**
- **Identification of high priority issues** and consensus among stakeholders as to how to proceed to resolve them.
- **Implementation of watershed-based solutions**.
- **Evaluate** success.

Many of the tasks noted above will not be limited to a particular part of the watershed cycle. Rather, some may overlap throughout the watershed cycle as may be the case with tasks such as review and assessment of monitoring data and permit compliance. Also, some tasks may have less emphasis than others depending on the watershed, its problems, and the relative influence of point versus nonpoint source contributors.

What is important is the basic tenets of watershed management are being implemented:

- *The effort has a geographic focus,*
- *The highest priority issues are being identified and addressed,*
- *Stakeholder involvement is occurring, and*
- *A scientific basis for water quality management decisions is being created.*

While this is an idealized model, many factors often change what can be done for each step. these include regulatory or statutory mandates, consent decrees, legislation, and changes in Board priorities or funding.

OUR HIGH PRIORITY ISSUES UNDER THE WMI

This Regional Board establishes priorities on an annual basis. While some of these priorities fall outside of the watershed management arena (it is acknowledged that some activities will likely always remain outside of the WMI), the bulk of these priorities are clearly of primary importance in fulfilling not only the WMI but also the nonpoint source management initiative and other mandates. For example, one major priority is, in fact, implementation of the watershed approach. In addition to Regional Board-directed priorities, priorities are mandated by legislation, statute, regulation, State Board, Cal-EPA, USEPA, and from sheer need to protect, restore, or enhance water quality. A list of the highest of these collective priorities follows. These are not necessarily arranged in priority order; however, TMDL work is considered the highest statewide priority.

- **Alternative methods to demonstrate water quality improvement** – tie water quality improvement to beneficial use improvement as a preferred way to demonstrate effectiveness of grant projects that are multi-use or habitat restoration in nature.
- **Point sources** – controlling compounds which continue to cause instream toxicity and/or accumulate in sediments or biota.
- **Industrial discharges** – ensuring compliance with either individual or general permits.
- **New/re-development** – proactively addressing water quality issues through CEQA, 401 certifications, or stormwater permits – ensuring wet weather compliance with construction permits.
- Addressing the **regional salt management**/salt imbalance issue which is becoming increasingly critical in the region. Also, balancing this issue with the need to promote the use of reclaimed water.
- **Development, adoption, and implementation of TMDLs** is a high priority both regionally and statewide.
- **Municipal stormwater/urban runoff** – advancing stormwater and urban runoff programs through a variety of efforts. Current priorities include trash control and new development/re-development issues.
- **Watershed monitoring and assessment** – coordination of existing resources and participation in the Surface Water Ambient Monitoring Program. More use of bioassessment as a tool.
- **Water quality standards** program – although this is the cornerstone of all of our programs, it has been minimally funded for the last two decades. This is a critical need for our organization to address this deficiency as all of our other programs are dependent on this information (TMDLs, permitting, clean-ups).
- **Habitat loss/restoration** – even with strides in improving instream water quality, unless habitat is restored (riparian/wetlands, in particular), in many cases beneficial uses can not be fully restored.
- **Preservation of high quality habitats** – ensure maintenance of beneficial uses at these sites through support of low-impact development coupled with minimized/avoided hydromodification
- Priority **nonpoint source** efforts – several areas have been targeted for accelerated efforts including development of regional strategies to address agriculture, septic tanks, urban runoff, and marinas as contributors of nonpoint source pollution.
- **Toxic hot spots** (sediment) – many of the impairments in the Region, particularly in harbors, are related to contaminated sediments. While source reduction will decrease pollutant levels over time, remediation of these sediments will also be needed which will be a long-term project.
- **Beach closures** – other impairments in the Region are the result of elevated coliform levels or beach closures. Monitoring the water quality of recreational areas along the coast, identifying land uses or drainages which generate pathogens, and reducing pollution within these areas is a targeted activity.
- **Implementation of agricultural waiver** - reduce loadings from agriculture through implementation of agricultural waiver.
- **Reduce, reuse, and recycle water** – maximize water conservation in Region.

These Board priorities are further highlighted in the watershed and region-wide sections as appropriate.

Section 2. Activities Organized on a Watershed Basis

This section describes activities organized on a watershed basis. An **overview** of each watershed or WMA is provided, its **water quality problems and issues** are described, **past significant activities** (as appropriate), **current activities** (funded activities), **near-term activities** (planned or projected high priority activities that may need funding), and **potential long-term activities** (long-term goals, beyond two years).

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2.1 LOS ANGELES RIVER WATERSHED

This watershed will be targeted in FY2004/05.

Overview of Watershed

Size of watershed: 824 square miles

Length of river: 55 miles

The Los Angeles (LA) River watershed is one of the largest in the Region. It is also one of the most diverse in terms of land use patterns. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach.

Major tributaries to the river in the San Fernando Valley are the Pacoima Wash, Tujunga Wash (both drain portions of the Angeles National Forest in the San Gabriel Mountains), Burbank Western Channel and Verdugo Wash (both drain the Verdugo Mountains). Due to major flood events at the beginning of the century, by the 1950's most of the river was lined with concrete. In the San Fernando Valley, there is a section of the river with a soft bottom at the Sepulveda Flood Control Basin. The Basin is a 2,150-acre open space upstream of the Sepulveda Dam designed to collect flood waters during major storms. Because the area is periodically inundated, it remains in a semi-natural condition and supports a variety of low-intensity uses as well as supplying habitat. At the eastern end of the San Fernando Valley, the river bends around the Hollywood Hills and flows through Griffith and Elysian Parks, in an area known as the Glendale Narrows. Since the water table was too high to allow laying of concrete, the river in this area has a rocky, unlined bottom with concrete-lined or rip-rap sides. This stretch of the river is fed by natural springs and supports stands of willows, sycamores, and cottonwoods. The many trails and paths along the river in this area are heavily used by the public for hiking, horseback riding, and bird watching.

South of the Glendale Narrows, the river is contained in a concrete-lined channel down to Willow Street in Long Beach. The main tributaries to the river in this stretch are the Arroyo Seco (which drains areas of Pasadena and portions of the Angeles National Forest in the San Gabriel Mountains), the Rio Hondo, and Compton Creek. Compton Creek supports a wetland habitat just before its confluence with the Los Angeles River. The river is hydraulically connected to the San Gabriel River Watershed by the Rio

Hondo through the Whittier Narrows Reservoir. Flows from the San Gabriel River and Rio Hondo merge at this reservoir during larger flood events, thus flows from the San Gabriel River Watershed may impact the LA River. Most of the water in the Rio Hondo is used for groundwater recharge during dry weather seasons. The San Gabriel River drains approximately 689 square miles, which includes the eastern San Gabriel Mountains and portions of the Chino, San Jose, and Puente Hills.

Beneficial Uses in watershed:

Estuary	*Above estuary*
Industrial service supply	Groundwater recharge
Contact & noncontact water recreation	Contact & noncontact water recreation
Navigation	Warmwater habitat
Commercial & sportfishing	Wetlands Habitat
Protection of rare & endangered species	Protection of rare & endangered species
Wildlife habitat	Wildlife habitat
Marine habitat	
Migration of aquatic organisms	
Spawning	
Estuarine habitat	

The LA River tidal prism/estuary begins in Long Beach at Willow Street and runs approximately three miles before joining with Queensway Bay located between the Port of Long Beach and the city of Long Beach. The channel has a soft bottom in this reach with concrete-lined sides. Queensway Bay is heavily water recreation-oriented; however, major pollutant inputs are likely more related to flows from the LA River which carries the largest storm flow of any river in southern California.

Also part of the watershed are a number of lakes including Peck Road Park, Belvedere Park, Hollenbeck Park, Lincoln Park, and Echo Park Lakes as well as Lake Calabasas. These lakes are heavily used for recreational purposes.

Four basins in the San Fernando Valley area contain substantial deep groundwater reserves and are recharged mainly through runoff and infiltration although the increase in impermeable surfaces has decreased infiltration. Groundwater basins in the San Gabriel Valley are not separated into distinct aquifers other than near the Whittier Narrows. Active recharge occurs in some of these areas through facilities operated by Los Angeles County. Spreading grounds recharge two basins in the coastal plain of Los Angeles west of the downtown area.

Permitted discharges:

- 144 NPDES discharges including: seven major NPDES dischargers (four POTWs); 23 minor individual permits; 114 dischargers covered by general permits
- Minor permits cover miscellaneous wastes such as ground water dewatering, recreational lake overflow, swimming pool wastes, and ground water seepage. Other permits are for discharge of treated contaminated ground water, noncontact cooling water, and storm water
- Two municipal storm water permits
- 1,336 dischargers covered under an industrial storm water permit
- 456 dischargers covered under a construction storm water permit

Water Quality Problems and Issues

Pollutants from dense clusters of residential, industrial, and other urban activities have impaired water quality in the middle and lower watershed. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff), is the high number of point source permits.

Types of permitted wastes discharged into the Los Angeles River Watershed:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) contaminated groundwater DCNWTRS	2 14	Minor General
Nonhazardous (designated) domestic sewage & industrial waste DDOMIND	4	Major
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	1 6 43	Major Minor General
Nonhazardous (designated) noncontact cooling water DNONCON	2 8	Minor General
Nonhazardous (designated) process waste (produced as part of industrial/manufacturing process) DPROCES	3	Minor
Nonhazardous (designated) stormwater runoff DSTORMS	1 6	Major Minor
Hazardous contaminated groundwater HCNWTRS	2 7	Minor General
Nonhazardous (designated) domestic sewage DDOMEST	1 1	Major Minor
Nonhazardous (designated) filter backwash brine waters DFILBRI	1	Minor
Hazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage HMISCEL	4	General
Nonhazardous drilling muds NDRILLS	1	General
Nonhazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage NMISCEL	16	General
Nonhazardous contaminated groundwater NCNWTRS	1	General
Inert filter backwash brine waters IFILBRI	1	General
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage IMISCEL	12	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water quality
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

A majority of the 144 NPDES discharges go directly to the Los Angeles River. Burbank Western Channel receives three discharges, Compton Creek receives seven, and Rio Hondo receives sixteen.

Of the 1,336 dischargers enrolled under the general industrial storm water permit in the watershed, the largest numbers occur in the cities of Los Angeles (many within the community of Sun Valley), Vernon, South Gate, Long Beach, Compton, and Commerce. Metal plating, transit, trucking & warehousing, and wholesale trade are a large component of these businesses. This watershed has about twice the number of industrial stormwater dischargers as does the San Gabriel River Watershed and the most in this region.

There are a total of 456 construction sites enrolled under the construction storm water permit. The larger sites are in the upper watershed (which includes the San Fernando Valley) and the construction in this

watershed is fairly evenly divided between commercial and residential. About one-half of them occur on sites that are larger than five acres with the largest sites being up to 700 acres.
IMPAIRMENTS: The majority of the LA River Watershed is considered impaired due to a variety of point and nonpoint sources. The 2002 303(d) list implicates pH, ammonia, a number of metals, coliform, trash, scum, algae, oil, chlorpyrifos as well as other pesticides, and volatile organics for a total of 107 individual impairments (reach/constituent combinations). Some of these constituents are of concern throughout the length of the river while others are of concern only in certain reaches (see chart below). Impairment may be due to water column exceedances, excessive sediment levels of pollutants, or bioaccumulation of pollutants. The beneficial uses threatened or impaired by degraded water quality are aquatic life, recreation, groundwater recharge, and municipal water supply.

The table below gives examples of typical data ranges which led to the listings.

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
ammonia	Basin Plan narrative objective		Tujunga Wash (d/s Hansen Dam to Los Angeles River) Los Angeles River Reach 5 (within Sepulveda Basin)
	Basin Plan numeric objective: varies depending on pH and temperature but the general range is 0.53 - 2.7 mg/l of total ammonia (at average pH and temp.) in waters designated as WARM to protect against chronic toxicity and 2.3 - 28.0 mg/l to protect against acute toxicity	ND - 34.9 mg/l (mean of 10.7 ± 4.8)	Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.) Los Angeles River Reach 3 (Riverside Dr. to Figueroa St.) Los Angeles River Reach 2 (Figueroa St. to u/s Carson St.) Los Angeles River Reach 1(u/s Carson St. to estuary) Burbank Western Channel Lincoln Park Lake Echo Park Lake Lake Calabasas
nutrients (algae)	Basin Plan narrative objective		Los Angeles River Reach 5 (within Sepulveda Basin) Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.)
	Basin Plan numeric objective: nitrates-N + nitrites-N not greater than 10 mg/l	0.2 - 14.5 mg/l (mean of 2.7 ± 3.2)	Los Angeles River Reach 3 (Riverside Dr. to Figueroa St.) Los Angeles River Reach 2 (Figueroa St. to u/s Carson St.) Los Angeles River Reach 1(u/s Carson St. to estuary) Burbank Western Channel Verdugo Wash (Reaches 1 & 2) Arroyo Seco Rch 1 (d/s Devil's Gate Dam) & Rch 2 (W. Holly Ave. to Devil's Gate) Echo Park Lake
Scum, odors	Basin Plan narrative objective		Tujunga Wash (d/s Hansen Dam to Los Angeles River) Los Angeles River Reach 5 (within Sepulveda Basin) Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.) Los Angeles River Reach 3 (Riverside Dr. to Figueroa St.) Los Angeles River Reach 2 (Figueroa St. to u/s Carson St.) Los Angeles River Reach 1(u/s Carson St. to estuary) Burbank Western Channel Peck Rd Lake Lincoln Park Lake Echo Park Lake Lake Calabasas
pH	Basin Plan numeric objective: 6.5 - 8.5 pH units	7.0 - 10.6 pH units (mean of 9.2 ± 0.9)	Los Angeles River Reach 1(u/s Carson St. to estuary) Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River) Compton Creek Echo Park Lake Lake Calabasas

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
Low DO/organic Enrichment	Basin Plan narrative objective		Lincoln Park Lake Peck Rd Lake
	Basin Plan numeric objective: annual mean greater than 7.0 mg/l no single sample less than 5.0 mg/l	0.2 - 15.2 mg/l (mean of 6.0 ± 4.0)	Lake Calabasas
Trash	Basin Plan narrative objective		Tujunga Wash (d/s Hansen Dam to Los Angeles River) Burbank Western Channel Verdugo Wash (Reaches 1 & 2) Arroyo Seco Reach 1 (d/s Devil's Gate Dam) & Reach 2 (W. Holly Ave. to Devil's Gate) Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River) Peck Rd Lake Echo Park Lake Lincoln Park Lake
Copper	USEPA water quality criteria: varies based on hardness but typically 12 - 47 ug/l	63 ug/l (maximum)	Tujunga Wash (d/s Hansen Dam to Los Angeles River) Compton Creek Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River) Echo Park Lake
Lead (sediment and/or water)	USEPA water quality criteria: varies based on hardness but typically 3.2 - 25 ug/l Sediment quality guidelines: 112 – 218 ug/g	140 ug/l (maximum) in water 35 – 213 ug/g (sediment)	Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.) Los Angeles River Reach 2 (Figueroa St. to u/s Carson St.) Los Angeles River Reach 1(u/s Carson St. to estuary) Los Angeles River Estuary (Queesway Bay) (sediment) Monrovia Cyn Creek Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River) Compton Creek Peck Rd Lake Lincoln Park Lake Echo Park Lake
Cadmium	USEPA water quality criteria: varies based on hardness but typically 1.1 - 4.0 ug/l	3 ug/l (maximum)	Burbank Western Channel Los Angeles River Reach 1(u/s Carson St. to estuary)
Zinc (sediment and/or water)	USEPA water quality criteria: varies based on hardness but typically 106 - 414 ug/l Sediment quality guidelines: 271 - 410 ug/g	1,340 ug/l (maximum) in water 37 – 510 ug/g (sediment)	Los Angeles River Estuary (Queensway Bay) (sediment) Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River)
Selenium	USEPA water quality criteria: 5.0 ug/l	9.3 ug/l (maximum)	Aliso Canyon Wash McCoy Canyon Creek Dry Canyon Creek
coliform	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml Beaches: total coliform not to exceed 1,000 MPN/100ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100ml at any time	ND - 93,000 MPN/100ml	Tujunga Wash (d/s Hansen Dam to Los Angeles River) Los Angeles River Reach 6 (u/s of Sepulveda Basin) Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.) Los Angeles River Reach 2 (Figueroa St. to u/s Carson St.) Los Angeles River Reach 1(u/s Carson St. to estuary) Verdugo Wash (Reaches 1 & 2) Arroyo Seco Rch 1 (d/s Devil's Gate Dam) & Rch 2 (W. Holly Ave. to Devil's Gate) Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River) Rio Hondo Reach 2 (Whittier Narrows Flood Control Basin to Spreading Grounds) Compton Creek Dry Canyon Creek McCoy Canyon Creek Bell Creek
PCBs (tissue or sediment)	State Board numeric objective (tissue): Max. Tissue Residue Level 5.3 ng/g	50 – 84 ng/g (tissue)	Echo Park Lake (tissue)
	Sediment quality guidelines: 180 – 188 ng/g	29 – 397 ng/g (sediment)	Los Angeles River Estuary (Queensway Bay) (sediment)
DDT (tissue or sediment)	State Board numeric objective (tissue): Max. Tissue Residue Level 32.0 ng/g	14 – 49 ng/g (tissue)	Los Angeles River Estuary (Queensway Bay) (sediment)
	Sediment quality guidelines: 45 – 52 ng/g	16 – 75 ng/g (sediment)	Lake Calabasas (tissue) Peck Rd Lake (tissue)
Chlordane (tissue or sediment)	State Board numeric objective (tissue): Max. Tissue Residue Level 8.0 ng/g	7 – 42 ng/g (tissue)	Peck Rd Lake (tissue)

Sediment quality guidelines: 4 – 6 ng/g	12 – 25 ng/g (sediment)	Los Angeles River Estuary (Queensway Bay) (sediment)

Potential sources of pollution:

- POTWs
- Industrial discharges
- septic systems
- landfills
- Nonpoint sources (horse stables, golf courses)
- Illegal trash dumping
- Cross-contamination between surface and groundwater

Ground water resources in the watershed are also impacted. Impacts, both real and threatened, include those from hundreds of cases of known leaking underground storage tanks that have contaminated soil and/or ground water with petroleum hydrocarbons and volatile organic compounds. There are also a number of cases of refineries/tank farms that have contaminated soil and/or ground water. Seawater intrusion (chloride) is of concern in other areas of the watershed which has necessitated wellhead treatment, shutdown, or blending. Finally, a number of wells have been shut down due to nitrate contamination with septic systems as a likely source.

ISSUES: The major issues of concern in the watershed include: 1) protection and enhancement of fish and wildlife habitat, 2) removal of exotic vegetation, 3) enhancement of recreational areas, 4) attaining a balance between water reclamation and minimum flows to support habitat, 5) management of storm water quality, 6) assessment of other nonpoint sources including horse stables, golf courses, and septic systems, 7) pollution from contaminated ground water, 8) groundwater recharge with reclaimed water, 9) contamination of ground water by volatile organic compounds, 10) leakage of MTBE from underground storage tanks, 11) groundwater contamination with heavy metals, particularly hexavalent chromium, and 12) contaminated sediments within the LA River estuary.. Some of these issues are only indirectly related to water quality but are those identified by stakeholder groups.

COMPLETED TMDLS

- Trash (2001)
- Nutrients (2004)

CURRENTLY SCHEDULED TMDLS:

- metals-FY04/05
- historic pesticides-FY07/08
- coliform-FY07/08

Stakeholder Groups

Los Angeles & San Gabriel Rivers Watershed Council The group was formed in 1995 following a large watershed conference held in the area which served as a springboard. The Council has a board of directors and became incorporated as a nonprofit organization in 1996. The group is tracking watershed activities, but has primarily focused on flood control issues in the Los Angeles River as well as opportunities to create greenbelts and restore habitat. The Council's goal is to help facilitate a process to preserve, restore, and enhance all aspects of the two watersheds. The Council recently published a document entitled “Beneficial Uses of the Los Angeles and San Gabriel Rivers” which summarizes a great deal of information about the joint watershed. Generally one staff person attends these monthly

council as well as monthly board of directors meetings. More information about this group may be found at their website http://www.lasgrwc.org/.

Friends of the Los Angeles River The Friends of the LA River is a nonprofit organization formed in 1986 in support of Los Angeles River restoration activities. More information about the organization may be found at http://www.folar.org/.

Past Significant Activities

WATERSHED MANAGEMENT

Key regulatory staff were part of a LA River Watershed "team" for purposes of preparing a State of the Watershed Report/Water Quality Characterization Report (a draft of which was released April 18, 1998) and for coordinating permit renewals and regional monitoring program development.

NONPOINT SOURCE PROGRAM

A 319(h) project by the Friends of the Los Angeles River terminated in 2002. The project involved volunteer monitoring of the river for physical and chemical parameters and surveys of the natural bottom portions of the river.

The City of Los Angeles Department of Public Works and Stormwater Management Division received a Proposition 13 grant (Nonpoint Source Subaccount) in 2001 to install a low-flow diversion and treatment system for the 8th Street drainage area leading into the river. The most severe bacterial pollution along the entire river has been found at this storm drain. All dry weather flow will be diverted to the sewer system. Trash and other solid pollutants will be captured both during diversion and non-diversion periods.

Current Activities

The following is a summary of current Regional Board activities in the Los Angeles River Watershed which are expected to continue as part of the Watershed Management Initiative on a watershed basis. Activities which address the aforementioned pollutants or issues of concern are highlighted.

CORE REGULATORY

Continuing core regulatory activities that have been integrated into the watershed management approach include (but are not limited to) renewal/revision of NPDES permits including those covered under Regional Board general permits. Compliance inspections, review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue. Because of the large number of permits, renewal of permits in this watershed during its first cycle was spread over two years. Due to limited resources, only the basic regulatory activities are performed: review of dischargers' monitoring reports, minimum necessary inspections and sampling, issuance/renewal of permits, levels 1 and 2 enforcement actions (noncompliance and violation notification), case handling, and answering inquiries from the public.

The Los Angeles River Watershed falls within Los Angeles County which has been covered by a municipal storm water permit since 1990. The third five-year permit was and adopted on December 13, 2001. This permit covers Los Angeles County and all the incorporated cities, except the City of Long Beach, which was issued a separate municipal storm water permit in 1999. The Los Angeles County Flood Control District is the Principal Permittee. Under the requirements of the permit, the Permittees will implement the Storm Water Quality Management Plan which includes the following components: (a) Program Management; (b) Public Information and Participation Program; (c) Industrial/Commercial Facilities Program; (d) Development Planning Program; (e) Programs for Construction Sites; (f) Public Agency Activities; and (e) Illicit Connection/Illicit Discharge Elimination Program. These programs collectively are expected to reduce pollutants in storm water discharges to the maximum extent practicable. In addition, the County will conduct a storm water monitoring program to estimate mass emissions and toxicity of pollutants in its waters, evaluate causes of toxicity, and several other components to characterize storm water discharges and measure the effectiveness of the Storm Water Quality Management Program. The permit can be downloaded from the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/Stormwater/stormwater.html.

An important requirement of both the Los Angeles County and the City of Long Beach municipal storm water permits is implementation of the Standard Urban Storm Water Mitigation Plans (SUSMPs) and numerical design standards for Best Management Practices (BMPs), which municipalities began implementing in February 2001. The final SUSMP was issued on March 8, 2000, and amended in the permit, adopted on December 13, 2001. The SUSMP is designed to ensure that storm water pollution is addressed in one of the most effective ways possible, i.e., by incorporating BMPs in the design phase of new development and redevelopment. It provides for numerical design standards to ensure that storm water runoff is managed for water quality and quantity concerns. The purpose of the SUSMP requirements is to minimize, to the maximum extent practicable, the discharge of pollutants of concern from new and redevelopment. The requirements are very similar to the Ventura County SQUIMP. The numerical design standard is that post-construction treatment BMPs be designed to mitigate (infiltrate or treat) storm water runoff from the first ¾ inch of rainfall, prior to its discharge to a storm water conveyance system. Other standards also apply; additional information on the SUSMP may be found on the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/susmp/susmp_details.html.

Regulation of groundwater protection activities is intended to eventually become integrated into the watershed management approach while land disposal activities will likely remain separate. Accomplishment of core regulatory activities are a high priority that is currently funded; however, funds do not tend to go far enough to encompass extensive enforcement and response to complaints; however, enforcement is a high priority.

MONITORING AND ASSESSMENT

Work on a TMDL for nitrogen in the watershed is currently underway. Intensive monitoring has been conducted and a watershed model has been developed by SCCWRP.

This watershed was one of those focused on for SWAMP monitoring in FY03/04.

As part of a long-term integrated resource planning process, the City of Los Angeles has been conducting enhanced monitoring with the river. Additional information on flow requirements for sensitive habitats,

including the area in the concreted lower river utilized by shorebirds, was collected in collaboration with the US Bureau of Reclamation and the City's Department of Water and Power.

NONPOINT SOURCE PROGRAM

The major nonpoint source-generated pollutants found throughout the watershed that have contributed to its impairments are lead, coliform, and oil, while chlorpyrifos is implicated in the upper watershed. These pollutants are common components of dry weather urban runoff and wet weather storm runoff. In many ways, the "point source" municipal stormwater permit for LA County will be a major tool in nonpoint source pollution elimination. Permitees are responsible for development and implementation of storm water management plans, for plans to eliminate non-storm water discharges (dry weather urban runoff), and must apply best management practices to prevent storm water pollution.

Proposition 13 funds (Watershed Protection Subaccount) were awarded to the nonprofit organization the Los Angeles and San Gabriel Rivers Watershed Council to evaluate the effectiveness of infiltration BMPs on water quality at various depths as urban runoff infiltrates into the groundwater supply. Sampling under this contract is ongoing.

Staff will also be involved in stakeholder meetings and will assist in the development of watershed management plans which will be expected to address strategies to reduce point and nonpoint source pollutants as well as other issues other than strictly water quality concerns.

BASIN PLANNING

The 2001 Triennial Review identified adoption of TMDLs as Basin Plan amendments the highest priority issue that can be accomplished given existing resource levels. Approximately 0.5 PYs/TMDL is utilized for this task. Determination of appropriate nutrient (nitrate and phosphate) objectives for protection of aquatic life is also a high priority that is currently unfunded. 2 PYs are needed for this task.

Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

Review and comment on EIRs for the highest priority projects within the watershed will continue; however, there is currently no funding for this program.

WETLANDS PROTECTION AND MANAGEMENT

The Southern California Wetlands Recovery Project considers of various parcels along the lower Los Angeles River in the city of Long Beach a high priority in the current year's workplan. A combined Lower Los Angeles and San Gabriel Rivers Habitat Needs Assessment is another high priority project. Big Tujunga Wash Revegetation and Restoration is also in the current year's workplan. Funds have also bee allocated toward wetlands restoration feasibility work in the Dominguez Gap area and at two other sites adjacent to the lower river. More information on Wetland Recovery Project's workplan may be found at http://www.coastalconservancy.ca.gov/scwrp/index.html.

The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) is an independent State agency within the Resources Agency. State law established the Conservancy in 1999. Its jurisdiction includes the San Gabriel River and its tributaries, the Lower Los Angeles River and its tributaries, and the San Gabriel Mountains. Puente Hills, and San Jose Hills. It was established to preserve open space and habitats in order to provide for low-impact recreation and educational uses, wildlife and habitat restoration and protection, and watershed improvements within its jurisdiction. It is currently involved with beginning work on an open space plan for the area. Propositions 12 and 40 have directed funds to the Conservancy. More information about the RMC's workplan may be found at http://www.rmc.ca.gov/.

The Santa Monica Mountains Conservancy (SMMC) is a state agency created by the Legislature in 1979 charged with primary responsibility for acquiring property with statewide and regional significance, and making those properties accessible to the general public. The Conservancy manages parkland in the Santa Monica Mountains, Santa Susana Mountains, the Simi Hills, the Santa Clarita Woodlands, the Whittier-Puente Hills, the Sierra Pelona, the Los Angeles River Greenway, the Rio Hondo, the Verdugo Mountains, the San Gabriel Mountains, and the San Rafael Hills. The agency's goals are to: 1) implement the Santa Monica Mountains Comprehensive Plan, 2) implement the Rim of the Valley Trails Corridor Master Plan, 3) implement the Los Angeles County River Master Plan, 4) further cooperation with local governments in the region to secure open space and parkland, and 5) expand education, public access, and resource stewardship components in a manner that best serves the public, protects habitat, and provides recreational opportunities. More information about SMMC activities may be found at http://smmc.ca.gov/.

WATERSHED MANAGEMENT

The Watershed Council was awarded Proposition 13 grant funds from the State Water Resources Control Board to prepare a **Compton Creek Watershed Management Plan**. Compton Creek is a tributary to the lower Los Angeles River. A steering committee has been meeting in 2004 to develop the Plan with input from the community.

The San Gabriel Valley Council of Governments (SGVCOG), in partnership with the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC), was awarded Proposition 13 grant funds from the State Water Resources Control Board to prepare a **Rio Hondo Watershed Management Plan**. The Rio Hondo is a major subwatershed draining to the Los Angeles River. Once the Plan is completed in late 2004, it is anticipated that the RMC will adopt it as part of their Rivers and Tributaries Greenway Plan. A webpage for the watershed management planning process is at http://www.rmc.ca.gov/rio_hondo/rh_index.html. The public review draft of the Watershed Plan can also be obtained at the website.

Information about the Arroyo Seco, a major tributary to the Los Angeles River, may be found at the Arroyo Seco Foundation's website http://www.arroyoseco.org/. The nonprofit group Northeast Trees has been directing development of a Proposition 13-funded watershed plan for the Arroyo Seco Subwatershed.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

Following renewal of the watershed's permits, core regulatory activities will focus on permit compliance, monitoring report review, and enforcement as needed. Members of the watershed team will be involved with periodic updates of the State of the Watershed Report. Additionally, there will be on-going interaction with stakeholders and followup on goals established during the permit renewal phase. Pending completion of a final TMDL we will pursue agreement on pollutant loadings that can be implemented through future NPDES permits, the municipal stormwater permit, and through other nonpoint source control measures.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

Our efforts to involve stakeholders also shall include exploration of funding options (especially for implementation of nonpoint source measures) and continuation of other outreach activities, such as presentations, meetings, and participation in environmental events.

Also, efforts are underway to address problems with urban runoff (through the storm water municipal and industrial NPDES permits) and septic systems. Future activities should focus on horse corrals and golf courses, parks or other green areas. Activities proposed include outreach to implement BMPs. Tier I activities also should include monitoring and assessment to determine if Tier 2 or Tier 3 activities are needed to ensure successful implementation of BMPs and reduction of nitrogen and coliform loadings.

We will maintain involvement with stakeholder activities and pursue funding options, especially those involving implementation of nonpoint source measures (coordinate 205(j) and 319(h) activities) as well as other outreach activities such as speeches, meetings, and participation in environmental events. As resources permit, we will also work with stakeholders to implement provisions of the Coastal Zone Act Reauthorization Amendments.

Potential Long-term Activities

In the long-term, Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities (such as more refined regional procedures for conducting use attainability analyses and site-specific objective development) into the next update of the Basin Plan. More detailed analysis regarding certain beneficial uses needs to be done (species inhabiting/using the river, potential for aquatic life in the river, future water supply needs/diversions, ground water recharge areas). We will continue to pursue funding for Basin Planning programs. Comments on watershed issues in CEQA documents (for the highest priority projects) will continue to be prepared; however, there is currently no funding for this program.

Other issues include:

- Balancing maintenance of habitat in the river with flood control needs
- Evaluation of areas in the river for restoration purposes
- Evaluating critical habitat areas

- Evaluating the most protective (while providing flood control) long-term plans for vegetation/sediment removal under the 401certification program
- Evaluate and implement low flow diversions where appropriate
- Assist in greenway developments along the river
- Evaluate estuarine habitats and water quality
- Implementing biological monitoring

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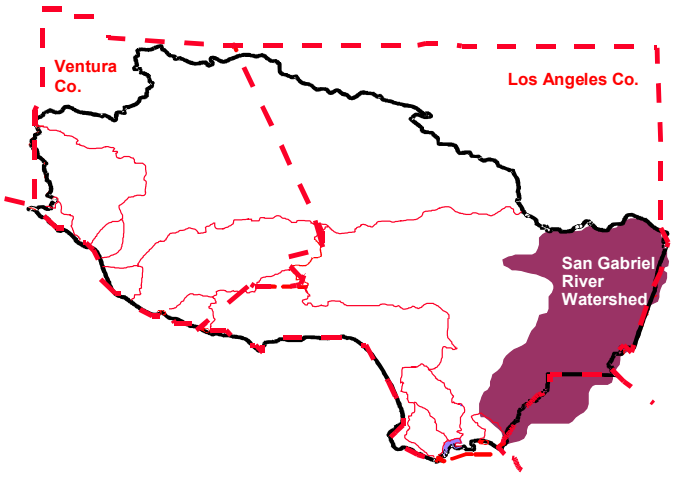
2.2 SAN GABRIEL RIVER WATERSHED

This watershed will be targeted in FY05/06.

Overview of Watershed



Size of watershed: 689 sq. mi.

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming an soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channelized portion and nurseries, small stable areas, and a large poultry farm are located in these areas.

Beneficial Uses designated in the watershed:

Estuary	*Above Estuary*
Contact & noncontact water recreation	Contact & noncontact water recreation
Industrial service supply	Industrial service supply
Protection of rare & endangered species	Protection of rare & endangered species
Wildlife habitat	Wildlife habitat
Spawning	Spawning
Marine habitat	Warm- & coldwater habitat
Estuarine habitat	Municipal water supply
Navigation	Groundwater recharge
Commercial & sportfishing	Industrial process supply
Migratory	Agricultural supply

Water Quality Problems and Issues

Pollutants from dense clusters of residential and commercial activities have impaired water quality in the middle and lower watershed. Tertiary effluent from several sewage treatment plants enters the river in its middle reaches (which is partially channelized) while two power generating stations discharge cooling water into the river's estuary. The watershed is also covered under two municipal storm water NPDES permits. Several landfills are also located in the watershed.

Several reservoirs, which exist primarily for flood control purposes, occur in the upper part of the watershed. Frequent removal of accumulated sediments is necessary to maintain the flood control capacity of these reservoirs. Some of the removal methods previously used have had water quality impacts. Continued need for such maintenance could cause longer-term impacts. A study is currently underway to better assess impacts associated with the sluicing projects.

Significant Issues:

- Sluicing of reservoirs
- Protection of groundwater recharge areas
- Trash in upper watershed
- Mining/stream, modifications
- Ambient toxicity
- Urban and storm water runoff quality
- Nonpoint source loadings from nurseries and horse stables

Permitted discharges:

- 79 NPDES discharges including: six major NPDES dischargers (four POTWs), 18 minor permits, 55 discharges covered under general permits
- 2 municipal storm water permits
- 606 dischargers covered under an industrial storm water permit
- 247 dischargers covered under a construction storm water permit

Types of permitted wastes discharged into the San Gabriel River Watershed:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) contaminated groundwater DCNWTRS	8	General
Nonhazardous (designated) contact cooling water DCONTAC	1 2	Major Minor
Nonhazardous (designated) domestic sewage & industrial waste DDOMIND	6	Major
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	3 19	Minor General
Nonhazardous (designated) noncontact cooling water DNONCON	1	Minor
Nonhazardous (designated) process waste (produced as part of industrial/manufacturing process) DPROCES	1 1	Major Minor
Nonhazardous (designated) stormwater runoff DSTORMS	8 1	Minor General
Hazardous contaminated groundwater HCNWTRS	3 8	Minor General
Inert filter backwash brine waters IFILBRI	1	General
Nonhazardous contaminated groundwater NCNWTRS	3	General
Nonhazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage) NMISCEL	9	General
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage) IMISCEL	6	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

A majority of the 79 NPDES permittees in the watershed discharge directly to the San Gabriel River (39). Twenty-four discharge to Coyote Creek and nine discharge to San Jose Creek.

Of the 606 dischargers enrolled under the general industrial storm water permit in the watershed, the largest numbers occur in the cities of Industry, Irwindale, Pomona, and Santa Fe Springs. Lumber, metal plating, trucking & warehousing, and transit are a large component of these businesses.

There are 247 construction sites enrolled under the construction storm water permit. The sites are fairly evenly divided between residential and commercial and a similar number of sites are found in both the upper and lower watershed. About one-half of them occur on sites that are larger than five acres; sites are up to 400 acres in size.

IMPAIRMENTS: The upper reaches of the river (in the Angeles National Forest) are heavily used for recreational purposes and have been impacted from trash, debris, and habitat destruction. Various reaches of the river are on the 2002 303(d) list due to nitrogen and its effects, trash, PCBs and pesticides, metals, and coliform for a total of 47 impairments (reach/constituent combinations). The table below gives examples of typical data ranges which led to the listings.

Impairments	**Applicable Objective/Criteria**	**Typical Data Ranges Resulting in Impairment**	**303(d) Listed Waters/Reaches**
ammonia	Basin Plan narrative objective		Coyote Creek Legg Lake
	Basin Plan numeric objective: varies depending on pH and temperature but the general range is 0.53 - 2.7 mg/l of total ammonia (at average pH and temp.) in waters designated as WARM to protect against chronic toxicity and 2.3-28.0 mg/l to protect against acute toxicity	ND - 21.1 mg/l (mean of 10.1±4.1)	El Dorado Lakes
toxicity	Basin Plan narrative objective	0 – 100% survival	San Gabriel River Reach 3 (Whittier Narrows to Ramona) San Gabriel River Reach 1 (Estuary to Firestone) Coyote Creek Walnut Creek Wash (drains from Puddingstone Res.)
algae	Basin Plan narrative objective		San Gabriel River Reach 1 (Estuary to Firestone) San Jose Creek Reach 1 (SG confluence to Temple St.) San Jose Creek Reach 2 (Temple to I-10 at White Ave) Coyote Creek El Dorado Lakes
Eutrophication	Basin Plan narrative objective		El Dorado Lakes
pH	Basin Plan numeric objective: 6.5 - 8.5 pH units	6.9 - 9.4 pH units (mean of 8.5±0.6)	Walnut Creek Wash (drains from Puddingstone Res.) El Dorado Lakes Legg Lake Santa Fe Dam Park Lake
odors	Basin Plan narrative objective		Legg Lake
low DO, organic enrichment	Basin Plan narrative objective		Puddingstone Reservoir Crystal Lake
	Basin Plan numeric objective: annual mean greater than 7.0 mg/l no single sample less than 5.0 mg/l	0.1 - 14.9 mg/l (mean of 4.3±3.5)	
trash	Basin Plan narrative objective		Legg Lake
Lead	USEPA water quality criteria: varies based on hardness but typically 3.2 - 25 ug/l	100 ug/l (maximum)	San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam) Santa Fe Dam Park Lake El Dorado Lakes Coyote Creek Legg Lake
Copper	USEPA water quality criteria varies based on hardness but typically 12 - 47 ug/l	186 ug/l (maximum)	Legg Lake El Dorado Lakes Coyote Creek San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam) Santa Fe Dam Park Lake
Zinc, dissolved	USEPA water quality criteria: varies based on hardness but typically 106 - 414 ug/l	50 – 810 ug/l (mean of 172 ± 186.6)	Coyote Creek San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam)
Mercury (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level: 0.37 ug/g	0.6 ug/g (tissue)	Puddingstone Reservoir El Dorado Lakes

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
coliform	Basin Plan numeric objective: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml	ND - 240000 MPN/100ml	San Jose Creek Reach 2 (Temple to I-10 at White Ave) San Jose Creek Reach 1 (SG confluence to Temple St.) San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam) San Gabriel River Reach 1 (Estuary to Firestone) Coyote Creek
Selenium, total	USEPA water quality criteria: 5 ug/l	14.9 (ug/l (maximum)	Coyote Creek
DDT	State Board numeric objective (tissue): Max. Tissue Residue Level 32.0 ng/g	25 - 36 ng/g (tissue)	Puddingstone Reservoir
PCBs	State Board numeric objective (tissue): Max. Tissue Residue Level 2.2 ng/g	54 - 65 ng/g (tissue)	Puddingstone Reservoir
chlordane	State Board numeric objective (tissue): Max. Tissue Residue Level 1.1 ng/g	16.1 - 31.7 ng/g (tissue)	Puddingstone Reservoir
abnormal fish histology	Basin Plan narrative objective		Coyote Creek San Gabriel River Reach 1 (Estuary to Firestone) San Gabriel River Estuary

COMPLETED TMDLS

- East Fork trash (2000)

CURRENTLY SCHEDULED TMDLS:

- metals-FY05/06
- toxicity-FY06/07
- nitrogen-FY07/08

Stakeholder Groups

Los Angeles/San Gabriel Rivers Watershed Council: This nonprofit organization was formed in 1995 following a large watershed conference held in the area which served as a springboard for other efforts. The Council has a board of directors and became incorporated as a nonprofit organization in 1996. The group is tracking watershed activities, as well as opportunities to create greenbelts and restore habitat. The Council's goal is to help facilitate a process to preserve, restore, and enhance all aspects of the two watersheds. More information on this group may be found on their website http://www.lasgrwc.org/.

Friends of the San Gabriel River: This nonprofit organization was formed in 1999 that advocates water quality improvements, restoration of habitat, and increased access to the river for the public. The group received a grant from CalFED to conduct volunteer monitoring in the river. More information on this group may be found on their website at http://www.sangabrielriver.org/.

Past Significant Activities

CORE REGULATORY

Individual NPDES permits in this watershed were renewed in FY99/00.

WATERSHED MANAGEMENT

A "State of the Watershed" report is available for the San Gabriel River Watershed which was prepared by Regional Board staff in 2000. The report describes the watershed, with its many diversion structures

and recharge areas, and summarizes available water quality data in a manner easily understood by the layperson. The report can be downloaded in its entirety by accessing the Regional Board's website at http://www.waterboards.ca.gov/losangeles and clicking on "Watersheds" on the left side-bar which leads to a clickable map of the region's watersheds for information specific to each one. Hardcopies of the report are also available.

MONITORING AND ASSESSMENT

As part of a larger-scale investigation which concluded in 1996, ambient toxicity (as well as fish histopathology) was evaluated at a number of locations in the river which lead to additional 303(d) listings for impairments.

The East Fork Trash TMDL (1999) documented the main sources of trash in the upper watershed.

California State University, Fullerton, under contract with the Regional Board, completed a GIS-based project in the watershed during 2000 which involved verifying with Global Positioning Satellite (GPS) previous Regional Board sampling locations in the river. Digital photos and video of the locations were also taken and aerial photos were also taken. This information will augment the existing Regional Board GIS for that watershed.

Current Activities

The following is a summary of current regional board activities in the San Gabriel River Watershed which are expected to continue as part of the Watershed Management Initiative on a watershed basis.

CORE REGULATORY

Continuing core regulatory activities that will be integrated into the watershed management approach include (but are not limited to) necessary renewal/revision of NPDES permits. There are six major dischargers, 18 significant or minor dischargers under individual permits, as well as 55 dischargers currently covered under general permits. Compliance inspections, review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue. All of the County Sanitation Districts' permits for their inland POTWs (which comprise most of the flow in the middle to lower river) are being renewed this year. Due to limited resources, only the basic regulatory activities are performed: review of dischargers' monitoring reports, minimum necessary inspections and sampling, issuance/ renewal of permits, levels 1 and 2 enforcement actions (noncompliance and violation notification), case handling, and answering inquiries from the public.

The San Gabriel River Watershed falls within Los Angeles County which has been covered by a municipal storm water permit since 1990. The third five-year permit was adopted on December 13, 2001. This permit covers Los Angeles County and all the incorporated cities, except the City of Long Beach, which was issued a separate municipal storm water permit in 1999. The Los Angeles County Flood Control District is the Principal Permittee. Under the requirements of the permit, the Permittees will implement the Storm Water Quality Management Plan which includes the following components: (a) Program Management; (b) Public Information and Participation Program; (c) Industrial/Commercial Facilities Program; (d) Development Planning Program; (e) Programs for Construction Sites; (f) Public Agency Activities; and (e) Illicit Connection/Illicit Discharge Elimination Program. These programs collectively are expected to reduce pollutants in storm water discharges to the maximum extent

practicable. In addition, the County will conduct a storm water monitoring program to estimate mass emissions and toxicity of pollutants in its waters, evaluate causes of toxicity, and several other components to characterize storm water discharges and measure the effectiveness of the Storm Water Quality Management Program. The permit can be downloaded from the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/sw_municipal.html.

An important requirement of both the Los Angeles County and the City of Long Beach municipal storm water permits is implementation of the Standard Urban Storm Water Mitigation Plans (SUSMPs) and numerical design standards for Best Management Practices (BMPs), which municipalities began implementing in February 2001. The final SUSMP was issued on March 8, 2000, and amended in the permit, adopted on December 13, 2001. The SUSMP is designed to ensure that storm water pollution is addressed in one of the most effective ways possible, i.e., by incorporating BMPs in the design phase of new development and redevelopment. It provides for numerical design standards to ensure that storm water runoff is managed for water quality and quantity concerns. The purpose of the SUSMP requirements is to minimize, to the maximum extent practicable, the discharge of pollutants of concern from new and redevelopment. The requirements are very similar to the Ventura County SQUIMP.

The numerical design standard is that post-construction treatment BMPs be designed to mitigate (infiltrate or treat) storm water runoff from the first ¾ inch of rainfall, prior to its discharge to a storm water conveyance system. Other standards also apply; additional information on the SUSMP may be found on the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/la_ms4_final.html.

The watershed also falls partly within the City of Long Beach which was issued a municipal storm water permit in 1999.

NONPOINT SOURCE PROGRAM

The Regional Board encourages pollution prevention and source control; the Propositions 40 and 50, SRF, and 319(h) grants are tools to provide funds for these types of projects. Implementation of TMDLs for bacteria, nitrogen, and trash, as well as, preservation/restoration of high value habitat areas in support of the waters' beneficial uses are high priorities for the current grant programs.

MONITORING AND ASSESSMENT

This watershed was one of those targeted for sampling under SWAMP during FY03/04.

A San Gabriel River Watershed Monitoring Work Group is currently developing a watershed-wide monitoring program in aid of a permit requirement for several of the major NPDES dischargers. Members include representatives from the County Sanitation Districts of Los Angeles County, the Los Angeles County Department of Public Works, City of Downey, Los Angeles City Department of Water and Power, Friends of the San Gabriel River, the Los Angeles and Santa Ana Regional Boards, County of Orange, the Rivers and Mountains Conservancy, the San Gabriel Mountains Regional Conservancy, the Los Angeles and San Gabriel Rivers Watershed Council, and the Southern California Coastal Water Research Project. The monitoring program will attempt to integrate as much as possible with existing monitoring. The monitoring approach includes use of random sites in order to assess overall watershed health as well as directed sites at high habitat value areas and at the base of subwatersheds.

In support of TMDL work, focused monitoring has occurred for a variety of constituents and modeling of pollutant loading is ongoing.

The need for a tidal prism mixing study to resolve issues concerning the fate of freshwater effluent in the estuary had previously been noted. And, the 2000 State of the Watershed Report identified numerous inconsistencies or duplications in sampling effort occurring within the watershed. Consequently, a requirement was put into the County Sanitation Districts of Los Angeles County's monitoring and reporting program for their POTWs discharging in the watershed to work with Watershed Council to develop a watershed-wide monitoring plan to be implemented by the watershed's dischargers and other stakeholders. A draft is scheduled to be completed by December 2004.

BASIN PLANNING

Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

The 2001 Triennial Review identified adoption of TMDLs as Basin Plan amendments the highest priority item that can be accomplished with current levels of funding. An estimated 0.5 PYs/TMDL is utilized. Another high priority, currently funded item identified is an evaluation of specific proposals for changes to beneficial uses. After evaluation, one to three use revisions would be done over the next three years. There is one revision to be considered in this watershed, namely, moving El Dorado Lakes from the Los Angeles River Watershed to the San Gabriel River Watershed in the Basin Plan. Each use revision would utilize an estimated 0.1 PYs.

WETLANDS PROTECTION AND MANAGEMENT

The Southern California Wetlands Recovery Project considers development of an El Dorado Wetlands Restoration Plan a high priority in the current year's workplan. The Project also considers augmentation of funding for development of the Coyote Creek Subwatershed Management Plan (already partially funded though the County of Orange, Proposition 13, the County of Los Angeles, and the US Army Corps of Engineers) a high priority. A combined Lower Los Angeles and San Gabriel Rivers Habitat Needs Assessment is another high priority project. More information on the Wetlands Recovery Project's activities may be found at http://www.coastalconservancy.ca.gov/scwrp/index.html.

WATERSHED MANAGEMENT

The Santa Monica Mountains Conservancy is a state agency created by the Legislature in 1979 charged with primary responsibility for acquiring property with statewide and regional significance, and making those properties accessible to the general public. The Conservancy manages parkland in the Santa Monica Mountains, Santa Susana Mountains, the Simi Hills, the Santa Clarita Woodlands, the Whittier-Puente Hills, the Sierra Pelona, the Los Angeles River Greenway, the Rio Hondo, the Verdugo Mountains, the San Gabriel Mountains, and the San Rafael Hills. The agency's goals are to: 1) implement the Santa Monica Mountains Comprehensive Plan, 2) implement the Rim of the Valley Trails Corridor Master Plan, 3) implement the Los Angeles County River Master Plan, 4) further cooperation with local governments in the region to secure open space and parkland, and 5) expand education, public access, and resource stewardship components in a manner that best serves the public, protects habitat, and provides recreational opportunities. The agency's website is at http://www.smmc.ca.gov/.

In 1999, the Los Angeles County Board of Supervisors directed the Department of Public Works (in cooperation with the County Departments of Parks and Recreation and Regional Planning) to prepare a **San Gabriel River Master Plan**. The National Park Service through its Rivers, Trails, and Conservation Assistance Program will assist in the development effort. All river stakeholders have been invited to participate. The Master Plan will be a consensus-based document that will recognize and address River issues and concerns of the stakeholders. It will include areas within existing rights of way from Morris Dam in the San Gabriel Mountains to the River's outlet in Seal Beach. The Master Plan will identify project opportunities for: enhancements for recreation, open space, and habitat areas; restoration; preservation of the River's natural resources; maintaining flood protection and existing water rights. The Master Plan effort will be coordinated with the activities of the San Gabriel and Lower Los Angeles Rivers and Mountain Conservancy. A public review draft was released during summer 2004. Information on the Master Plan effort may be found at http://ladpw.org/pln/sgrmp/.

The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) has produced a **Guiding Principles Watershed and Open Space Plan** which may be obtained at http://www.rmc.ca.gov/. Meeting notices for the Conservancy's Board are also on the website. The Conservancy is an independent State agency within the Resources Agency of the State of California established by state law in 1999. Its jurisdiction includes the San Gabriel River and its tributaries, the Lower Los Angeles River and its tributaries, and the San Gabriel Mountains, Puente Hills, and San Jose Hills. It was established to preserve urban open space and habitats in order to provide for low-impact recreation and educational uses, wildlife and habitat restoration and protection, and watershed improvements within its jurisdiction. Implementation of the Open Space Plan is occurring partly through award of pass-through grant funds.

A watershed management plan for the **Coyote Creek** subwatershed is in development, funded partially by Proposition 13 funds.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

The 2001 Triennial Review identified a couple of high priority, currently unfunded items that affect this watershed. One is an evaluating adding or creating a subcategory of a beneficial use to better account for subsistence fishing as well as sport fishing in inland waters. Another priority is evaluating the appropriateness of a reservoir sluicing prohibition. Together these would require an estimated 1.0 PY to implement.

This watershed will be a focus for SWAMP monitoring in FY03/04.

We will maintain involvement with stakeholder activities and pursue funding options, especially those involving implementation of nonpoint source measures (coordinate 205(j), Prop. 13, SRF, and 319(h) activities) as well as other outreach activities such as speeches, meetings, and participation in

environmental events. As resources permit, we will also work with stakeholders to implement provisions of the Coastal Zone Act Reauthorization Amendments.

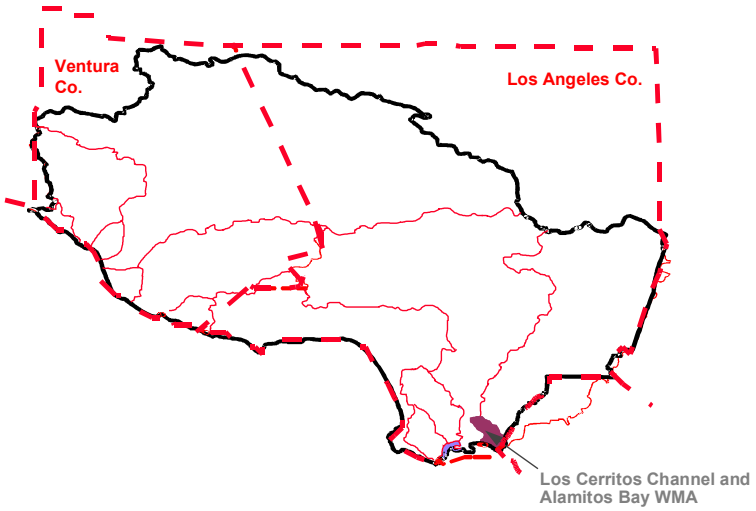
Potential Long-term Activities

- Development of coordinated watershed monitoring program
- Hydrologic study of the estuary to evaluate mixing dynamics and effects on water quality and beneficial uses
- Evaluation of fish tissue from fish in the lower river and estuary
- Evaluation of toxicity impacts in the estuary
- Evaluation of habitats in the middle/lower river
- Evaluation of impacts from reservoir cleaning on water quality, particularly fisheries-related
- Evaluation of mining on instream beneficial uses
- Evaluation of impacts of reclaimed water on river/groundwater
- Evaluation of success of trash TMDL efforts in upper river
- Evaluation of impacts from industrial stormwater in the watershed
- Consideration of TMDL-related issues
- Implementation of biological monitoring

2.3 LOS CERRITOS CHANNEL AND ALAMITOS BAY WMA

This watershed will be targeted in FY05/06.

Overview of WMA



Los Cerritos Channel, Tidal Prism, and Wetlands: The Los Cerritos Channel is concrete-lined above the tidal prism and drains a relatively small area of east Long Beach, albeit a densely urbanized one. The channel's tidal prism starts at Anaheim Road and connects with Alamitos Bay through the Marine Stadium; the wetlands connects to the Channel a short distance from the lower end of the Channel. The wetlands, and portion of the channel near the wetlands, is an overwintering site for a great diversity of birds (up to 50 species) despite its small size. An endangered bird species, the Belding's Savannah Sparrow, may nest there and an area adjacent to the wetlands is a historic least tern colony site. One small marina is located in the channel which is also used by rowing teams and is a popular fishing area.

Alamitos Bay: Alamitos Bay is composed of the Marine Stadium, a recreation facility built in 1932 and used for boating, water skiing, and jet skiing; Long Beach Marina, which contains five smaller basins for recreational craft and a boatyard; a variety of public and private berths; and the Bay proper which includes several small canals, a bathing beach, and several popular clamming areas. A small bathing lagoon, Colorado Lagoon in Long Beach, has a tidal connection with the Bay and a small wildlife pond, Sims Pond, also has a tidal connection. The latter is heavily used by overwintering migratory birds.

Beneficial uses designated in the watershed:

Estuary (marina, wetlands, bay)	*Above Estuary*
Contact & noncontact water recreation	Wildlife habitat
Industrial service supply	
Navigation	*Intermittent uses:*
Commercial & sportfishing	Noncontact water recreation
Estuarine habitat	Warmwater habitat
Marine habitat	
Wildlife habitat	
Preservation of rare & endangered species	
Migration of aquatic organisms	
Spawning habitat	
Shellfish harvesting	
Wetlands habitat	

Water Quality Problems and Issues

Significant Issues:

- Loss of wetlands habitat in Los Cerritos area
- Impacts from antifouling paint in marinas
- Urban and storm water runoff impacts on isolated water bodies
- Loss of tidal exchange

A considerable amount of leaching of boat paint likely occurs in the Bay, particularly in the marina. Nonpoint source runoff from storm drains is also a likely source of problems.

Permitted discharges:

- 10 NPDES discharges: three minor and seven under general permits
- 2 municipal storm water permits
- 36 dischargers covered under an industrial storm water permit
- 22 dischargers covered under a construction storm water permit

Types of permitted wastes discharged into the Los Cerritos Channel WMA:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) filter backwash brine waters DFILBRI	1	Minor
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	1	General
Nonhazardous (designated) stormwater runoff DSTORMS	2 1	Minor General
Nonhazardous (designated) noncontact cooling water DNONCON	1	General
Hazardous contaminated groundwater HCNWTRS	1	General
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage IMISCEL	1	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

Most of the 10 NPDES permittees in the watershed discharge to Los Cerritos Channel; the rest discharge to Alamitos Bay.

Of the 36 dischargers enrolled under the general industrial storm water permit in the watershed, the majority occur in the cities of Long Beach. Many of these businesses are involved with aircraft or watercraft production or maintenance, transportation, and trucking/warehousing.

There are 22 construction sites enrolled under the construction storm water permit. About one-half of them occur on sites that are five acres or larger and about one-half are commercial sites. Sites range up to 200 acres in size.

IMPAIRMENTS: Beneficial uses in the wetlands area are considered fully supported while those in the channel are not. Beneficial uses in the Bay are, for the most part, considered fully supported although Long Beach Marina is considered a site of concern due to elevated sediment concentrations of metals. The table below gives examples of typical data ranges which led to impairment listings for the 2002 listing process.

Impairments	**Applicable Objective/Criteria**	**Typical Data Ranges Resulting in Impairment**	**303(d) Listed Waters/Reaches**
Ammonia	Basin Plan narrative objective Basin Plan numeric objective: varies depending on pH and temperature but the general range is 0.53 - 2.7 mg/l of total ammonia (at average pH and temp.) in waters designated as WARM to protect against chronic toxicity and 2.3-28.0 mg/l to protect against acute toxicity	ND - 2.19 mg/l (mean of 0.34 ± 0.41)	Los Cerritos Channel
Copper (in tissue)	Basin Plan narrative objective		Los Cerritos Channel
Lead (in sediment)	Basin Plan narrative objective	510 ug/g (sediment)	Colorado Lagoon Los Cerritos Channel
Zinc (in sediment)	Basin Plan narrative objective	690 ug/g (sediment)	Colorado Lagoon Los Cerritos Channel
Chlordane (in tissue or sediment)	State Board numeric objective (tissue): Max. Tissue Residue Level 8.3 ng/g Sediment quality guidelines: 4 – 6 ng/g	64.9 ng/g (tissue) ND – 11 ng/g (sediment)	Colorado Lagoon (tissue & sediment) Los Cerritos Channel (sediment)
DDT	State Board numeric objective (tissue): Max. Tissue Residue Level 32.0 ng/g	59.9 ng/g (tissue)	Colorado Lagoon
PCBs	State Board numeric objective (tissue): Max. Tissue Residue Level 2.2 ng/g	42.0 ng/g (tissue)	Colorado Lagoon
dieldrin	State Board numeric objective (tissue): Max. Tissue Residue Level 0.65 ng/g	18.2 ng/g (tissue)	Colorado Lagoon
sediment toxicity	Basin Plan narrative objective		Colorado Lagoon
coliform	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml Beaches: total coliform not to exceed 1,000 MPN/100ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100ml at any time	2 - 170000 MPN/100ml	Los Cerritos Channel
PAHs	Basin Plan narrative objective	10,000 ng/g (sediment)	Colorado Lagoon

Stakeholder Groups

This watershed area is within the purview of the *Los Angeles/San Gabriel Watershed Council* and the *Friends of the San Gabriel River*. The Los Cerritos WMA is located between the Los Angeles and San Gabriel Rivers and drains to the same general area as the San Gabriel River. There is also a minor hydraulic connection between the lower San Gabriel River and Los Cerritos Channel due to the location of a power plant intake with the Long Beach Marina; the discharge from this facility is into the San Gabriel River estuary.

Other stakeholder groups include the *Los Cerritos Wetlands Task Force* at http://www.loscerritos.org/ and *Friends of Colorado Lagoon* at http://www.coloradolagoon.org/.

Current Activities

The following is a summary of current regional board activities in the Los Cerritos Channel and Alamitos Bay Watershed which are expected to continue as part of the Watershed Management Initiative on a watershed basis.

CORE REGULATORY

Continuing core regulatory activities that will be integrated into the watershed management approach include (but are not limited to) necessary renewal/revision of NPDES permits. There eight significant or minor dischargers under individual permits as well as seven dischargers currently covered under general permits. Compliance inspections, review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue.

The Los Cerritos Channel and Alamitos Bay WMA falls partly within Los Angeles County which was issued a renewed municipal storm water permit in December 2001. There are 87 co-permittees covered under this permit including 85 cities, the County of Los Angeles, and the California Department of Transportation (Caltrans). Work on the permit will involve review of monitoring reports, evaluation of the storm water program's effectiveness, coordination with other watershed efforts, and modification of the permit as necessary. The watershed falls mostly within the City of Long Beach which was issued a municipal storm water permit in 1999.

An important requirement of both storm water municipal permits is implementation of the Standard Urban Storm Water Mitigation Plans (SUSMPs) and Numerical Design Standards for Best Management Practices (BMPs) which were adopted in 2000. The SUSMP is designed to ensure that storm water pollution is addressed in one of the most effective ways possible, i.e., by incorporating BMPs in the design phase of new development and redevelopment. It provides for numerical design standards to ensure that storm water runoff is managed for water quality concerns in addition to flood protection and that pollutants carried by storm water are retained and not delivered to waterways.

The numerical design standard is that post-construction treatment BMPs be designed to mitigate (infiltrates or treat) storm water runoff from the first ¾ inch of rainfall, prior to its discharge to a storm water conveyance system. Other standards also apply; additional information on the SUSMP may be found on the Regional Board website http://www.waterboards.ca.gov/losangeles.

MONITORING AND ASSESSMENT

This watershed was a focus for SWAMP monitoring in FY03/04.

NONPOINT SOURCE PROGRAM

The Regional Board encourages pollution prevention and source control; the Propositions 40 and 50, SRF, and 319(h) grants are tools to provide funds for these types of projects. Implementation of TMDLs for bacteria, nitrogen, and trash, as well as, preservation/restoration of high value habitat areas in support of the waters' beneficial uses are high priorities for the current grant programs.

BASIN PLANNING

The 2001 Triennial Review identified adoption of TMDLs as Basin Plan amendments the highest priority issue that can be accomplished with current levels of funding. Approximately 0.5 PYs/TMDL would be utilized.

Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

WETLANDS PROTECTION AND MANAGEMENT

The Southern California Wetlands Recovery Project has identified acquisition of an option on the 185-acre Bixby Ranch, the 100-acre Hellman Ranch, as well as the Bryant Ranch parcels in and around Los Cerritos Wetlands as priority projects in their current year workplan. Development of a conceptual restoration plan for the wetlands is also a high priority. Another high priority project in the watershed management area is restoration of Colorado Lagoon. A restoration feasibility study funded by the Wetlands Recovery Project is currently underway. More information may be found at http://www.coastalconservancy.ca.gov/scwrp/index.html.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities and TMDLs in this area.

We will maintain involvement with stakeholder activities and pursue funding options, especially those involving implementation of nonpoint source measures (coordinate 205(j) and 319(h) activities) as well as other outreach activities such as speeches, meetings, and participation in environmental events. As resources permit, we will also work with stakeholders to implement provisions of the Coastal Zone Act Reauthorization Amendments.

Potential Long-term Activities

- Evaluation of existing conditions/beneficial uses
- Consideration of TMDL-related issues
- Implementation of biological monitoring

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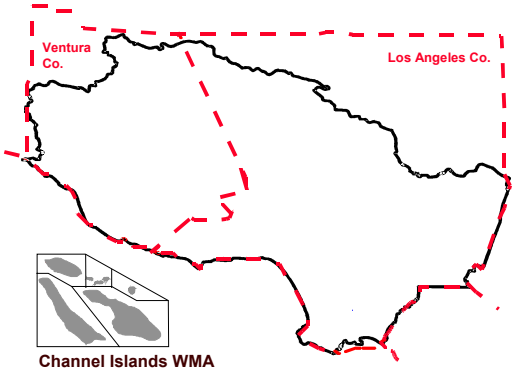
2.4 THE CHANNEL ISLANDS WMA

This watershed will be targeted in FY05/06.

Overview of WMA



The Channel Islands within the Region's boundaries are: Anacapa, San Nicolas, Santa Barbara, Santa Catalina, and San Clemente Islands. Anacapa and Santa Barbara Islands are part of the Channel Islands National Park. The waters within six nautical miles of Anacapa and Santa Barbara Islands are designated a national marine sanctuary.

Beneficial Uses of Island Watercourses

Municipal supply
Groundwater recharge
Contact & noncontact water recreation
Warmwater habitat
Wildlife habitat
Preservation of rare & endangered species

The Channel Islands WMA

- Five islands
- Areas offshore of islands designated as Areas of Special Biological Significance
- High quality marine and rocky intertidal habitat
- Heavy use by marine mammals and endangered species
- No impairments

The ocean waters adjacent to the islands (not the entire circumference of Santa Catalina however) were designated Areas of Special Biological Significance by the state of California. The west side of San Nicolas supports a large gull rookery and elephant seal breeding area. The U.S. Navy has facilities on San Nicolas (and a desalination plant) and San Clemente Islands with a small package treatment plant on the latter. San Clemente Island is the primary maritime training area for the U.S. Department of the Navy Pacific Fleet, U.S. Navy SEALs, and the U.S. Marine Corps. The city of Avalon is located on Santa Catalina Island and also has a small treatment plant.

Water Quality Problems and Issues

Water quality in the vicinity of the islands is generally good. There are some potential threats from naval facilities and small treatment plants; however, there is only one area (Avalon Beach) with an impairment listing, for bacteria.

Permitted discharges:

- 6 NPDES discharges including one POTW (major discharge) on Catalina Island
- Four minor NPDES discharges
- 5 dischargers covered under an industrial storm water permit
- 1 discharger covered under a construction storm water permit

Types of permitted wastes discharged into the Channel Islands WMA:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) filter backwash brine waters DFILBRI	2	Minor
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	1	Minor
Nonhazardous (designated) contaminated groundwater DCNWTRS	1	General
Nonhazardous (designated) domestic sewage DDOMEST	1 1	Major Minor

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

Most of the NPDES, general industrial and general construction dischargers are located on Catalina Island.

Stakeholder Group

There is no formal stakeholder group organized for the islands.

Current Activities

CORE REGULATORY

Continuing core regulatory activities that will be integrated into the watershed management approach include (but are not limited to) necessary renewal/revision of NPDES permits. There is one major discharger (sewage treatment plant on Santa Catalina Island) and four significant or minor dischargers under individual permits. Compliance inspections, review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue.

Due to limited resources, only the basic regulatory activities are performed: review of dischargers' monitoring reports, minimum necessary inspections and sampling, issuance/renewal of permits, levels 1 and 2 enforcement actions (noncompliance and violation notification), case handling, and answering inquiries from the public.

BASIN PLANNING

The 2001 Triennial Review identified adoption of TMDLs as Basin Plan amendments the highest priority issue that can be accomplished with current levels of funding. Approximately 0.5 PYs/TMDL would be utilized.

A draft final San Clemente Island Integrated Natural Resources Management Plan (INRMP) for San Clemente Island has been prepared by he U.S. Navy. The Island is home to a variety of unique and rare biological resources both on the land and in the adjacent waters. The INRMP will establish priorities for the next 5 years by which the Island provides necessary military training opportunities, while sustaining and enhancing the natural resources found there.

MONITORING AND ASSESSMENT

This watershed will be a focus for SWAMP monitoring in FY04/05.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

We will maintain involvement with island activities and pursue funding options, especially those involving implementation of nonpoint source measures (coordinate 205(j) and 319(h) activities) as well as other outreach activities such as speeches, meetings, and participation in environmental events. As resources permit, we will also work with stakeholders to implement provisions of the Coastal Zone Act Reauthorization Amendments.

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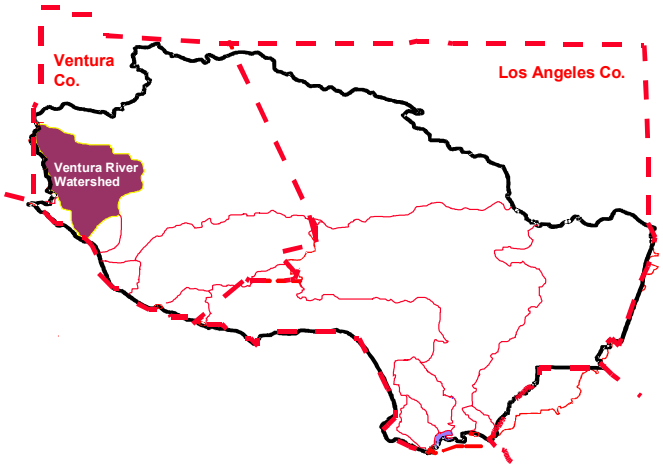
2.5 VENTURA RIVER WATERSHED

This watershed will be targeted in FY06/07.

Overview of Watershed



The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins composed of alluvial aquifers deposited along the surface water system, are highly interconnected with the surface water system and are quickly recharged or depleted, according to surface flow conditions. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters.

Precipitation varies widely in the watershed. Most occurs as rainfall during just a few storms, between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The erratic weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Beneficial Uses in Watershed:

Estuary	*Above Estuary*
Navigation	Municipal supply
Commercial & sportfishing	Industrial service supply
Estuarine habitat	Industrial process supply
Marine habitat	Agricultural supply
Contact & noncontact water recreation	Contact & noncontact water recreation
Warmwater habitat	Warmwater habitat
Wildlife habitat	Wildlife habitat
Preservation of rare & endangered species	Preservation of rare & endangered species
Migratory & spawning habitat	Migratory & spawning habitat
Wetlands habitat	Wetlands habitat
Shellfish harvesting	Coldwater habitat
	Groundwater recharge
	Freshwater replenishment

Water Quality Problems and Issues

The majority of water quality problems involve eutrophication (excessive nutrients and effects), especially in the estuary/lagoon although some DDT and metals have been found in mussel and fish tissue (on the 303(d) list for these). A large storm drain enters the river near the estuary and homeless persons live in and frequent the river bed. Sediment in the estuary, however, appears relatively uncontaminated and in laboratory tests conducted through the Bay Protection and Toxic Cleanup Program, little sediment toxicity was found. In some subwatersheds, high TDS concentrations impair the use of water for agriculture. The watershed's water quality problems are, for the most part, nonpoint source-related. There have also been incidents of releases of toxic materials into storm drains entering the lower river.

The Ventura River Watershed

- Eutrophication concerns, especially in lagoon
- Some bioaccumulation of DDT and metals
- TDS concerns in some subwatersheds
- Impediments to steelhead trout migration (but much high quality habitat)
- More nonpoint source rather than point source problems

There is only one major discharger, a small POTW (3.0 MGD) in the middle reach of the Ventura River which has recently upgraded (end of 1997) to tertiary treatment The treatment plant effluent had been implicated in nuisance growth of aquatic plants and low dissolved oxygen found at times downstream of the discharge. For much of the year, the facility's effluent can make up two-thirds of the total river flow. The major concern was the facility's inability to meet the nutrients and suspended solids discharge limitations in its NPDES permit. Additionally, high biochemical oxygen demand (BOD) in the effluent resulted in dissolved oxygen concentrations in the river that could not support cold water aquatic habitat. The facility was required to upgrade under a Regional Board Cease and Desist Order. The most recent monitoring has shown the quality of the effluent has significantly improved including a reduction of nitrate-nitrogen from 20 mg/l to 4 mg/l, a reduction of suspended solids from 12 mg/l to 2 mg/l, and a reduction of BOD from 10 mg/l to 2 mg/l. DO levels in the river have improved dramatically to about 11 mg/l and algal growth is greatly reduced below the plant; however, nonpoint sources (agriculture and horse stables) still appear to be contributing to algal growth above the plant.

Permitted discharges:

- 7 NPDES discharges: one major (POTW) and six discharges covered by general permits
- 37 dischargers covered under an industrial storm water permit
- 13 dischargers covered under a construction storm water permit

Types of permitted wastes discharged into the Ventura River Watershed:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) domestic sewage & industrial waste DDOMIND	1	Major
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage IMISCEL	1	General
Hazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage HMISCEL	1	General
Nonazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage NMISCEL	1	General
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	2	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards

Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

Most of the seven NPDES permittees in the watershed discharge to the main river.

Of the 37 dischargers enrolled under the general industrial storm water permit in the watershed, the majority are in the city of Ventura. Wineries and oil-related activities are most prominently represented. Most of the facilities are under ten acres in size.

About one-half of the 13 dischargers under the general construction storm water permit are all on residential sites; most of the sites are over 5 acres in size and range up to 50 acres.

Water diversions, dams, and groundwater pumping also are thought to limit surface water resources needed to support a high quality fishery. Reduced water supplies affect water quality and thus beneficial uses, particularly with regards to the endangered steelhead trout (steelhead trout are known to utilize the River and some of its tributaries historically supported annual steelhead runs of 5000 – 6000 adults). Removal of the Matilija Dam (upper river) has recently been identified as a high priority.

The table below gives examples of typical data ranges which led to the 2002 303(d) listings.

IMPAIRMENTS:

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
Algae	Basin Plan narrative objective		Ventura River Reach 2 (Main St. to Weldon Canyon) Ventura River Reach 1 (estuary to Main St.) Ventura River Estuary
Coliform, fecal	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml Beaches: total coliform not to exceed 1,000 MPN/100ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100ml at any time	2 – 900 mpn/100ml	Canada Larga Ventura River Estuary
Pumping, Water diversions	200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml		Ventura River Reach 4 (Coyote Creek to Camino Cielo Rd.) Ventura River Reach 3 (Weldon Canyon to confl. w/ Coyote Cr)
Eutrophication	Basin Plan narrative objective		Ventura River Estuary
Fish Barriers	Basin Plan narrative objective		Matilija Creek Reach 1 (Jct. With N. Fork to Reservoir) Matilija Creek Reach 2 (above Reservoir) Matilija Reservoir
Low DO	Basin Plan numeric objective: mean of greater than 7 mg/l with no single sample less than 5 mg/l	2.4 – 13.33 mg/l	Canada Larga
Nitrogen	Basin Plan numeric objective: 5 mg/l	0.06 – 14.5 mg/l	San Antonio Creek
Trash	Basin Plan narrative objective		Ventura River Estuary

Stakeholder Groups

Ventura River Steelhead Restoration and Recovery Plan Group A Plan was developed in response to the listing of steelhead trout as an endangered species by the National Marine Fisheries Service (NMFS) in August 1997. The plan was developed 1) to identify measures to mitigate impacts of ongoing operations and maintenance activities, 2) to identify future projects and, 3) identify and evaluate opportunities to promote recovery and restoration of the steelhead trout in the watershed. One staff person will continue to remain involved with the group, as needed.

Ventura River Habitat Conservation Plan (HCP) Group: The group, mostly comprised of resource agencies, cities, and water districts, began meeting in 2000. The cities and water districts involved all operate and maintain facilities that may affect sensitive resources or their habitats in the river. In order to comply with the Endangered Species Act they are engaging in consultation with the National marine Fisheries Service and US Fish and Wildlife Service and are in the process of developing a HCP that, with monitoring program and implementation agreements, would serve as the basis for an Incidental Take Permit.

Matilija Dam Steering and Executive Committees: The USACE, Ventura County Flood Control District, US Bureau of Reclamation, and other agencies and entities began convening in 2000 to begin discussions on the possible removal of Matilija Dam as part of an ecosystem restoration. An USACE and VCFCD sponsored ecosystem restoration feasibility study was completed in summer 2004 and a favored alternative will be further pursued. More information may be found at http://www.matilijadam.org/.

Matilija Coalition: The coalition is a local group committed to removal of Matilija Dam and subsequent ecosystem, restoration. More information about the groups may be found at http://www.matilija-coalition.org/ .

Significant Past Activities

In August 1997, the National Marine Fisheries Service (NMFS) listed the steelhead trout in Southern California as endangered under the Federal Endangered Species Act (ESA). The listing means that any project or action that may affect steelhead trout or their habitats will require consultation with NMFS to obtain an incidental take permit. In order to prepare for the listing and deal with possible regulatory requirements as a result of the listing, the Casitas Municipal Water District, City of Ventura, Ventura County Flood Control District, and seven other local public and private agencies collaborated and developed the **Ventura River Steelhead Restoration and Recovery Plan** in December 1997 (see above). The plan also contains large amount of background information on the watershed such as hydrology, biology, steelhead habitat conditions, and the operations and maintenance of water wastewater, solid waste, transportation and flood control facilities of the sponsoring agencies. The regulatory activities by the Regional Water Quality Control Board in the watershed were briefly reviewed in the plan.

Regional Board staff produced a *State of the Watershed Report* for the Ventura River in 2002. This document is available on the Regional Board's website.

Permits in this watershed were renewed together in FY95/96 and again in FY00-01. The Ventura County Municipal Stormwater Permit was reissued in spring 2000.

Current Activities

The following is a summary of current regional board activities in the Ventura River Watershed which are expected to continue as part of the Watershed Management Initiative on a watershed basis.

CORE REGULATORY

Continuing core regulatory activities include compliance inspections, reviewing of monitoring reports, response to complaints, and enforcement actions as needed. Key regulatory staff will continue to remain involved in the Ventura River Watershed Team for purposes of coordinating watershed activities in-house and working on any needed State of the Watershed Report updates.

Additionally, most urban areas in Ventura County, including this watershed, are implementing Best Management Practices (BMPs) under the Municipal Storm Water Permit (revised in 2000). The "Discharger" consists of the co-permittees Ventura County Flood Control District, the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks. The Discharger is required to implement the Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan (SQUIMP), which requires the implementation of BMPs to reduce the discharge of pollutants in storm water from new development and significant redevelopment. Other requirements of the Municipal Storm Water Permit include a public education program, an educational site inspection program for industrial and commercial facilities, program for construction sites, public agency activities, and a storm water monitoring program.

The storm water monitoring program has consisted of land-use based monitoring, receiving water and mass emission station monitoring, and bioassessment. The Discharger also participates in regional monitoring activities, such as the Storm Water Monitoring Coalition, organized by the Southern California Coastal Water Research Project. Furthermore, the Discharger participates in the development and implementation of volunteer monitoring programs in the Ventura Coastal watersheds.

The Ventura River receives municipal storm drain discharges from the City of Ojai, City of San Buenaventura (part), and unincorporated Ventura County (part).

Currently under consideration are agreements with sister agencies in regulatory-based encouragement of Best Management Practices. Most notably is the use of a GIS layer for pesticides application available from the Department of Pesticide Regulation (DPR). Reduction of pesticides identified as contaminants of concern for a watershed might be addressed through a Management Agency Agreement (MAA) with the DPR, or through waiving adoption of waste discharge requirements on an individual basis using information gathered in databases provided by the Ventura County Agricultural Commission office.

MONITORING AND ASSESSMENT

A receiving water monitoring program is implemented by the Ojai Valley Sanitary District, supplemented by ambient or special monitoring conducted by Regional Board staff. The monitoring supports compliance evaluation, nonpoint source identification, and potential TMDL development. In conjunction with the receiving water monitoring, land-use based monitoring is done as part of the Ventura County

Municipal Storm Water Program as well as bioassessment. The County's work is integrated and coordinated with citizen monitoring being conducted by the Ventura River Stream Team.

The Ventura County Environmental Health Department conducts weekly coastline bacteriological monitoring for total and fecal coliform and enterococcus at a number of stations along the Ventura County coast. There are two stations in the immediate vicinity of the Ventura River, one upcoast and one downcoast. Monitoring results are at posted at http://www.ventura.org/env_hlth/ocean.htm.

This watershed will be a focus for SWAMP monitoring in FY04/05.

WETLANDS PROTECTION AND MANAGEMENT

The Southern California Wetlands Recovery Project considers the removal of Matilija Dam on Matilija Creek, a tributary to the Ventura River northwest of Ojai a priority project for funding. According to the US Fish & Wildlife Service, the removal would accomplish 1) restoration of the Ventura River ecosystem and contribute to recovery of endangered steelhead trout, 2) provide needed sediment for beach nourishment and coastal erosion control, and 3) facilitate recreational access to Matilija Wilderness Area in the Los Padres National Forest. Other high priority projects involve land acquisitions of primarily riparian habitat at the mouth of the river (the Zellerbach Property) and removal of Arundo.

NONPOINT SOURCE PROGRAM

A priority issue is continued work to determine the scope of water quality impacts from agricultural runoff in the Region. Some agricultural activities occur in the Ventura River Watershed. Development of solutions to any impacts is also a high priority and will be a major concern of the nonpoint source program and, by extension, watershed groups which will be addressing this as well as other problems.

BASIN PLANNING

The 2001 Triennial Review identified adoption of TMDLs as Basin Plan amendments the highest priority issue that can be accomplished with current levels of funding. Approximately 0.5 PYs/TMDL would be utilized.

Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

Review of and comment for the highest priority EIRs in the watershed will continue although this is currently an unfunded program.

WATERSHED MANAGEMENT

The Ventura County Watershed Protection District received a 205(j) planning grant to develop a watershed management plan and form a stakeholder group.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

Near-term **Basin Planning** issues include addressing impacts from hydromodification and pumping, particularly in steelhead trout restoration and dam removal efforts, and developing nutrient standards for the lagoon.

Potential Long-term Activities

Grant funding to help support this largely natural watershed's natural resources will be an important component of any long-term restoration and preservation process.

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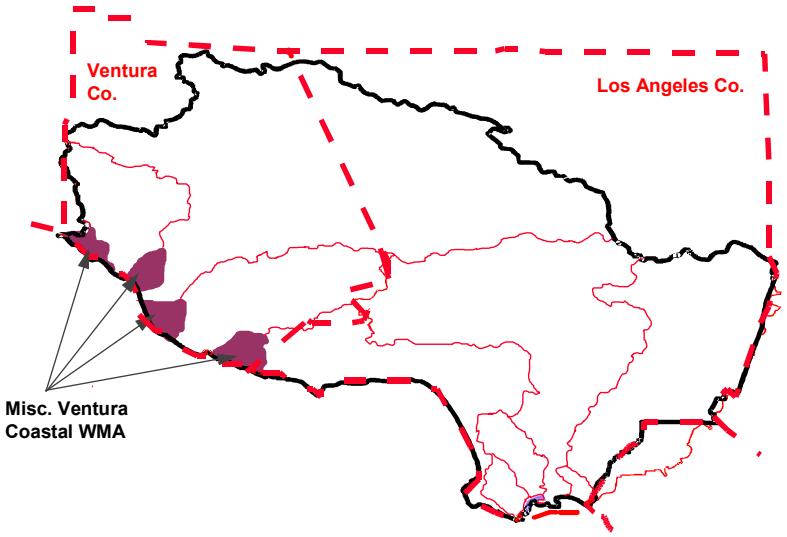
2.6 MISCELLANEOUS VENTURA COASTAL WMA

This Watershed Management Area will be targeted in FY06/07.

Overview of WMA

The WMA is composed of four separate coastal drainage areas located between the Regional boundary, the Ventura River, Santa Clara River, and Calleguas Creek Watersheds, as well as, the Santa Monica Bay WMA. The drainage areas are typified by either small coastal streams, wetlands, or marinas.

Channel Islands Harbor: Channels Islands Harbor is located south of the Santa Clara River and is in the immediate vicinity of considerable residential development and some agricultural land. The Southern California Edison inlet canal to the Ormond Beach Generating Station is located at the north end of the harbor. The harbor is home to many recreational boats and two boatyards.



Port Hueneme Harbor:
Port Hueneme is a medium-sized deepwater harbor located in Ventura County, north of Mugu Lagoon. Part of it was operated by a U.S. Navy Construction Battalion until very recently while the rest of the harbor serves as a commercial port operated by the Oxnard Harbor District. The construction of a majority of the harbor was completed in 1975. The commercial side generally serves ocean-going cargo vessels and oil supply boats; the latter serve the oil platforms in the Santa Barbara Channel. Two endangered bird species may use the harbor, the California Brown Pelican and the California Least Tern.

Ventura Marina: Ventura Marina is a small craft harbor located between the mouths of the Ventura and Santa Clara Rivers. It is home to numerous small boats and two boatyards. The "Ventura Keys" area of the marina is a residential area situated along three canals. The marina is surrounded by agricultural land and a large unlined ditch drains into the Keys area. Since the marina is between the mouths of two rivers which discharge large sediment loads from their relatively undeveloped watersheds, the marina has a constant problem with keeping the entrance channel open.

McGrath Lake: McGrath Lake is a small brackish waterbody located just south of the Santa Clara River. The lake is located partially on State Parks land and partially on privately-owned oilfields in current production. A number of agricultural ditches drain into the lake. A state beach is located off the coastal side of the lake. The habitat around the lake is considered to be quite unique and it is utilized by a large number of overwintering migratory birds.

Beneficial Uses in WMA

Channel Islands Harbor	*Port Hueneme Harbor*	*Ventura Marina*
Industrial service supply	Process water supply	Industrial service supply
Contact & noncontact water recreation	Contact & noncontact water recreation	Contact & noncontact water recreation
Navigation	Navigation	Navigation
Commercial & sportfishing	Commercial & sportfishing	Commercial & sportfishing
Marine habitat	Marine Habitat	Marine habitat
Wildlife habitat	Wildlife habitat	Wildlife habitat
		Shellfish harvesting

Ormond Beach	*Ormond Beach Wetlands and McGrath Lake*
Industrial water supply	Estuarine habitat
Contact & noncontact water recreation	Contact & noncontact water recreation
Wildlife habitat	Wildlife habitat
Wetlands habitat	Wetlands habitat
Protection of rare & endangered species	Protection of rare & endangered species
Navigation	
Power generation	
Commercial & sportfishing	
Marine habitat	
Shellfish harvesting	

Open Coastline: A major feature of the coastline north of Mugu Lagoon is Ormond Beach and Ormond Beach Wetlands. There are a number of scenarios under consideration for restoration of this degraded yet valuable wetlands.

Water Quality Problems and Issues

Channel Islands Harbor: The harbor is on the 2002 303(d) list for lead and zinc. During the early to mid-1980s, the State Mussel Watch Program (SMWP) found low to intermediate levels of metals and organics except for one especially high accumulation of DDT. Sediment sampling for metals conducted by Regional Board staff in 1988 revealed slightly to moderately elevated levels. Copper at one site was nearly 50 ppm and zinc was as high as 76 ppm. Arsenic was slightly elevated (4 ppm) at a sampling site located next to a drain possibly connected to a nearby agricultural field. Under the Bay Protection and Toxic Cleanup Program (BPTCP), the harbor is listed as site of concern due to DDT and silver sediment concentrations and sediment toxicity (but not recurrent toxicity); further monitoring is needed here.

The harbors
- One deepwater harbor and two small-craft marinas
- Accumulation of metals, PCBs, and historic pesticides in sediment and tissue
- Support considerable marine life

The wetlands and coast
- Historic pesticide contamination
- Loss of quality habitat
- Impacts from oil spills
- Use by endangered species

Port Hueneme Harbor: The harbor is on the 2002 303(d) list for PAHs, DDT, PCBs, TBT, and zinc. The SMWP has found elevated levels of Cu, Zn, PAHs, and PCBs. Zinc was at elevated levels on the commercial side while PCBs were very high on the Navy side. The Navy side is suspected of using large amounts of pentachlorophenol (PCP) for treatment of wood pilings. An Army Corps DEIR released in 1985 covering extension of one channel stated that water quality was good. The document also briefly discussed the port's biota which CDFG found to be "fairly healthy" and typical of southern California harbors. Sediment core samples were collected in 1985 and 1996 as part of a proposed dredge project. Relatively low levels of metals were found and no pesticides were detected. It may well be that flushing is good in the harbor and only locating a station directly next to a source will result in bioaccumulation. The BPTCP found fairly minimal levels of sediment toxicity but the harbor is considered a site of concern under the program due to accumulation of DDT, PCBs, TBT, PAHs, and zinc in mussel tissue. However, more recent monitoring conducted as part of dredging projects have found much lower concentrations of many pollutants, at least in sediment.

Ventura Marina: The marina (the Keys area) is on the 2002 303(d) list for coliform problems. The City of Ventura monitors six stations within the Keys and the nearby Arundell Barranca (open drain carrying mostly agricultural runoff) for coliform on a regular basis. There are currently ongoing discussions

concerning the possibility of re-rerouting the barranca away from the marina. The SMWP has found moderately elevated levels of metals, DDT, and chlordane in the marina from sampling conducted in the late 1980s; however, it is not listed as a site of concern under the BPTCP.

McGrath Lake: The lake is on the 2002 303(d) list for pesticides. The BPTCP found varying amounts of sediment toxicity and sediment levels of many pesticides were very high; the lake is listed as a toxic hot spot due to sediment concentrations of DDT, chlordane, dieldrin, toxaphene and endosulfan above sediment quality guidelines. A major crude oil spill into the lake occurred in late 1993 and runoff from nearby agricultural fields is ongoing. A characterization study revealed the large extent to which the sediment is contaminated; however, since the likelihood of cleanup is currently low, planning for habitat restoration proceeding.

Permitted discharges:

- 24 NPDES discharges including four major discharges (one POTW and two generating stations), 9 minor discharges, and 11 covered by general permits
- 82 dischargers covered under an industrial storm water permit
- 92 dischargers covered under a construction storm water permit

Open Coastline: Little is known of water quality in the Ormond Beach area. The Oxnard Treatment Plant discharges secondary effluent to the ocean off of Oxnard. The facility is currently investigating approaches to remove upstream brine dischargers in order to move toward water reclamation. Part of the reclaimed water is proposed for use in a seawater intrusion barrier project to protect the Oxnard Plain ground water basin. The ocean immediately off of the coast was part of Bight'98 and the 1994 Southern California Bight Pilot Project.

Types of permitted wastes discharged into the Misc. Ventura Coastal WMA:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) contaminated groundwater DCNWTRS	1	Minor
Hazardous contaminated groundwater HCNWTRS	2	General
Nonhazardous (designated) domestic sewage & industrial waste DDOMIND	1	Major
Nonhazardous (designated) domestic sewage DDOMEST	1	Major
Inert domestic sewage IDOMEST	1	General
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	4 2	Minor General
Nonhazardous (designated) noncontact cooling water DNONCON	1	Major
Nonhazardous (designated) process waste (produced as part of industrial/manufacturing process) DPROCES	1 1	Major Minor
Nonhazardous (designated) stormwater runoff DSTORMS	1	Minor
Nonhazardous (designated) filter backwash brine waters DFILBRI	1	Minor
Nonhazardous (designated) washwater waste (photo reuse washwater, vegetable washwater) DWSHWTR	1	Minor
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage) IMISCEL	2	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

Most of the 24 NPDES permittees in the watershed discharge to coastal streams.

Of the 82 dischargers enrolled under the general industrial storm water permit in the watershed, the majority occur in the city of Oxnard. Many of these businesses are involved with trucking, food packing, or watercraft maintenance.

There are 92 construction sites enrolled under the construction storm water permit on a mix of residential, industrial, and commercial sites. About one-half of the sites are five acres or larger up to about 100 acres.

IMPAIRMENTS:

The table below gives examples of typical data ranges which led to the listings.

Impairments	**Applicable Objective/Criteria**	**Typical Data Ranges Resulting in Impairment**	**303(d) Listed Waters/Reaches**
Beach closures	Basin Plan narrative objective	10 - 37 days/year closed	Mandalay Beach
Coliform	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml Beaches: total coliform not to exceed 1,000 MPN/100ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100ml at any time	Objective was exceeded from 32 - 75% of time	Santa Clara River Estuary Beach/Surfers Knoll McGrath Beach Ventura Harbor: Ventura Keys Surfers Point at Seaside McGrath Lake Rincon Beach Promenade Park Beach San Buenaventura Beach Ormond Beach (area 50 yds N of Oxnard Industrial Dr and a 50 yd area south of J St Dr) Hobie Beach (Channel Islands Harbor)
Sediment toxicity	Basin Plan narrative objective	7 – 85% survival	McGrath Lake
Chlordane (sediment)	Sediment quality guidelines: 4 – 6 ng/g	10 - 816 ng/g	McGrath Lake
DDT (sediment & tissue)	Sediment quality guidelines: 45 – 52 ng/g State Board numeric objective (tissue): Max. Tissue Residue Level 32.0 ng/g	150 - 3,488 ng/g (sediment) 700 ng/g (tissue)	McGrath Lake Port Hueneme Harbor
PCBs (sediment & tissue)	Sediment quality guidelines: 180 – 188 ng/g State Board numeric objective (tissue): Max. Tissue Residue Level 5.3 ng/g	14 – 448 ng/g (sediment) 2,000 ng/g (tissue)	McGrath Lake (sediment) Port Hueneme Harbor (tissue)
Dieldrin (sediment)	Sediment quality guidelines: 4 – 8 ng/g	1 – 38 ng/g	McGrath Lake
Zinc (sediment)	Sediment quality guidelines: 271 – 410 ug/g	133 - 580 ug/g (sediment)	Channel Islands Harbor
Lead (sediment)	Sediment quality guidelines: 112 – 218 ug/g	30 - 180 ug/g (sediment)	Channel Islands Harbor

COMPLETED TMDLS

- McGrath Beach coliform (2003)

CURRENTLY SCHEDULED TMDLS

- pesticides (Ventura Marina)-FY08/09
- coliform (Ventura Marina)-FY08/09

Stakeholder Group

Ormond Beach Task Force Ormond Beach is part of the Miscellaneous Ventura Coastal WMA; the area includes a somewhat degraded wetlands a large part of which has recently been acquired by the State for protection and restoration planning which has begun. The Task Force was formed in 1993 and currently meets monthly to address issues and projects which may affect the beach and wetlands.

Past Significant Activities

NONPOINT SOURCE

A recently concluded project funded by CWA Section 319(h) funds involved demonstrated advanced treatment processes of nutrients and pathogens utilizing septic systems.

MONITORING AND ASSESSMENT

McGrath Lake: A Consent Decree established a settlement with the responsible party in a 1993 crude oil spill. The settlement created a Trustee Council (California Department of Fish and Game, U.S. Fish and Wildlife Service, and California Department of Parks and Recreation) to determine how to spend $1.315 million targeted for natural resource restoration.

The Trustee Council formally requested assistance from the Regional Board to perform a study to characterize the water quality and sediments within the lake, as well as sources of contaminant inputs to the lake. The main objectives of the study were to determine whether it would be necessary or beneficial to dredge the lake to remove contaminated sediments, and whether it would be beneficial to spend funds on habitat improvement projects in and around the lake, given the ongoing potential contaminant inputs and uncontrolled water management activities. The Regional Board funded the characterization study (contributing $100,000) using some of the money the Board received from the oil spill settlement.

A preliminary study was conducted in August 1998 to aid in selection of sampling sites for the characterization study. The characterization study was conducted in October 1998 and included:

1) water quality measurements at several locations in the lake (temperature, dissolved oxygen, pH, and nutrient data)
2) surficial sediment samples at 10 stations in the lake will be analyzed for grain size, sediment chemistry (pesticides, petroleum hydrocarbons, metals) and sediment toxicity
3) deep sediment cores at 7 stations in the lake will be subsampled for sediment chemistry analyses
4) water column measurements at one station in an agricultural drain entering the lake (pesticides, metals, and nutrients)
5) sediment chemistry (pesticides and metals) at 2 stations in agricultural drains

Current Activities

CORE REGULATORY

Continuing core regulatory activities that will be integrated into the watershed management approach include (but are not limited to) necessary renewal/revision of NPDES permits. Compliance inspections,

review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue.

Additionally, most urban areas in Ventura County, including this watershed, are implementing Best Management Practices (BMPs) under the Municipal Storm Water Permit (revised in 2000). The "Discharger" consists of the co-permittees Ventura County Flood Control District, the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks. The Discharger is required to implement the Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan (SQUIMP), which requires the implementation of BMPs to reduce the discharge of pollutants in storm water from new development and significant redevelopment. Other requirements of the Municipal Storm Water Permit include a public education program, an educational site inspection program for industrial and commercial facilities, program for construction sites, public agency activities, and a storm water monitoring program.

The storm water monitoring program has consisted of land-use based monitoring, receiving water and mass emission station monitoring, and bioassessment. The Discharger also participates in regional monitoring activities, such as the Storm Water Monitoring Coalition, organized by the Southern California Coastal Water Research Project. Furthermore, the Discharger participates in the development and implementation of volunteer monitoring programs in the Ventura Coastal watersheds.

The Miscellaneous Ventura Coastal WMA receives municipal storm drain discharges from the City of Oxnard (part), City of Port Hueneme, and City of San Buenaventura (part).

MONITORING AND ASSESSMENT

The monitoring needs in this WMA include staff to evaluate coastal receiving water data, sediment data analysis and interpretation, resources to integrate surface and ground water data, and resources to evaluate other information (e.g., pesticide and fertilizer use databases as well as those for grower/crop and crop timing).

McGrath Lake: The characterization study previously conducted demonstrated widespread sediment contamination throughout most of the lake, including high concentrations of several trace metals and pesticides. Due to likely long delays in adequate funding for cleanup of contaminated sediments, the Trustee has decided to proceed with restoration planning and released a draft restoration plan in summer 2004.

Shoreline: Beginning in 1999, a new law (AB411) requires public health officials in coastal counties to conduct weekly testing, between April 1 and October 31, at beaches visited annually by more than 50,000 people and at adjacent storm drains (including natural creeks, streams, and rivers, that flow during the summer. Due to the popularity of Ventura County beaches for year-round activities, the Ventura County Board of Supervisors authorized the implementation of a program that expanded the monitoring program to all 12 months of the year. Ventura County Environmental Health Department conducts weekly surf zone sampling at 52 beach locations for total and fecal coliform and enterococcus. Data will be reviewed by the Regional Board and used to assess current conditions of Ventura County beaches for future 305(b) reports. Monitoring results are at posted at http://www.ventura.org/env_hlth/ocean.htm.

Open Coastline: Our source of data for the coastal areas comes chiefly from the one POTW and two generating stations which discharge offshore as well as regional data from Bight'98 and the 1994 SCBPP. These data support compliance evaluation.

WETLANDS PROTECTION AND MANAGEMENT

The Southern California Wetlands Recovery Project has listed Ormond Beach Wetlands acquisition and preparation of a restoration plan as a priority project for funding. Six hundred acres of wetlands and dunes parcels have been acquired and development of a restoration plan for these parcels has begun.

BASIN PLANNING

The 2001 Triennial Review identified adoption of TMDLs as Basin Plan amendments the highest priority issue that can be accomplished with current levels of funding. Approximately 0.5 PYs/TMDL would be utilized.

Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

NONPOINT SOURCE PROGRAM

We are encouraging application for Proposition 13 funding for use in preparation of a watershed management plan for this watershed management area.

Groundwater

The Oxnard Forebay is a prime groundwater recharge area that is impacted by nitrogen discharges, mainly from densely populated communities using septic systems, and agricultural areas. The Regional Board undertook a study of septic systems in the area during FY98/99; in August 1999 the Board adopted a Basin Plan amendment to prohibit septic systems in the Oxnard Forebay. The amendment immediately prohibits the installation of new septic systems or the expansion of existing septic systems on lot sizes of less than five acres. Discharges from septic systems on lot sizes of less than five acres must cease by January 1, 2008. This prohibition will affect up to 3,000 septic systems and ten to fifteen thousand people. The County of Ventura has applied for Small Community Grant funding to provide adequate sewage treatment on behalf of the Saticoy and El Rio communities.

Another **319(h)** project is underway which also involves septic tanks. This project involves the evaluation of several systems for nutrient removal.

A well head protection and demonstration project in the Fox Canyon Groundwater Management Area is being funded with **319(h)** monies. This project is destroying disused drinking water wells which may serve as a conduit for contamination to reach the deep water aquifer.

Currently under consideration are agreements with sister agencies in regulatory-based encouragement of Best Management Practices. Most notably is the use of a GIS layer for pesticides application available from the Department of Pesticide Regulation (DPR). Reduction of pesticides identified as contaminants

of concern for a watershed might be addressed through a Management Agency Agreement (MAA) with the DPR, or through waiving adoption of waste discharge requirements on an individual basis using information gathered in databases provided by the Ventura County Agricultural Commission office.

Marinas

There are a number of marinas in this WMA, all with well-documented levels and types of pollution consistent with nonpoint sources. We have initiated enforcement actions on several commercial fishing operations to ensure compliance with state discharge requirements. We will be focusing our 319(h) priorities for the upcoming application period on a number of areas of concern in the Region including development of education and outreach programs and implementation of management measures which are intended to reduce pollution from these nonpoint sources in marinas. A particular area of concern in Port Hueneme has been management of squid wastes from fishing vessels.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

The monitoring needs in this WMA include staff to evaluate coastal receiving water data, sediment data analysis and interpretation, resources to integrate surface and ground water data, and resources to evaluate other information (e.g., pesticide and fertilizer use databases as well as those for grower/crop and crop timing). This watershed will be a focus for SWAMP monitoring in FY04/05.

Most watershed programs look to the Regional Board as the information management agency for the collected data. To meet that need, we require additional resources related to data management and interpretation. Some of the expenditures under NPDES support the monitoring that will ultimately be used to identify and quantify nonpoint source inputs.

We will maintain involvement with stakeholder activities and pursue funding options, especially those involving implementation of nonpoint source measures as well as other outreach activities such as speeches, meetings, and participation in environmental events. With additional resources we propose conducting a number of education and outreach activities including holding regional workshops and conferences with other Regional Boards as well as experts in the field, contacting marina operators individually, and offering an incentives program.

Potential Long-term Activities

Arrundell Barranca: The Regional Board staff have been approached by the City of San Buenaventura for input on a potential project to re-route the Arrundell Barranca from Ventura Harbor to the Santa Clara River estuary. The proposal calls for a constructed wetlands near the estuary to treat the Barranca's water before entering the Santa Clara River. The project is proposed as a method of dealing with periodic coliform exceedances in areas of the Ventura Harbor/Ventura Keys.

Seawater Intrusion into the Oxnard Plain: The City of Oxnard is attempting to remove high TDS inputs to their treatment plant with the ultimate goal of reuse of the wastewater for a seawater intrusion barrier project in the Oxnard Plain.

Implementation of watershed-wide biological monitoring: This is a long-term goal for all of our watersheds.

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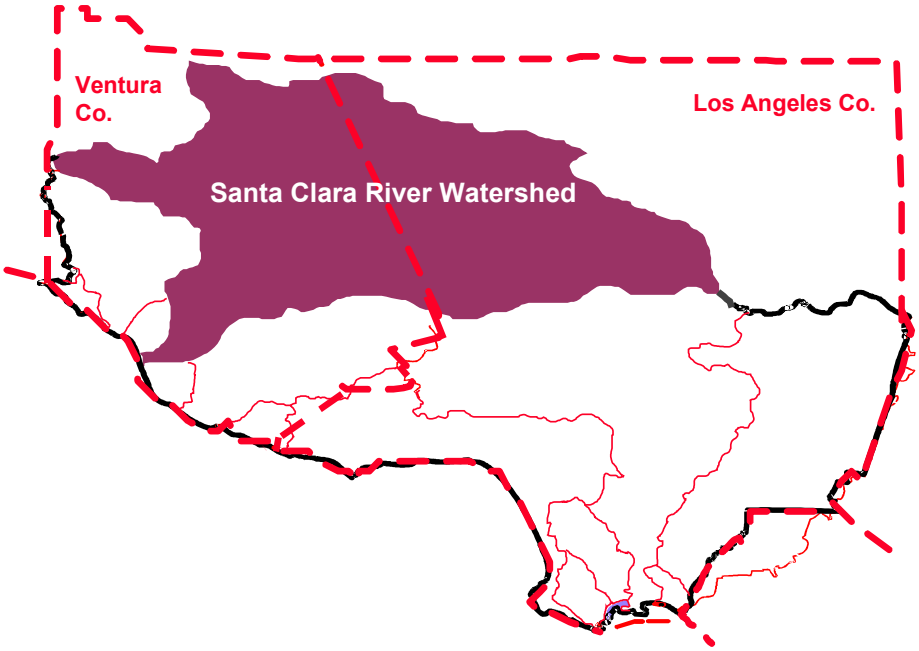
2.7 SANTA CLARA RIVER WATERSHED

This watershed will be targeted in FY06/07.

Overview of Watershed

Size of watershed: approximately 1,200 sq. mi.

Length of river: approximately 100 miles



The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Beneficial Uses in watershed:

Estuary	*Above Estuary*
Contact & noncontact water recreation	Contact & noncontact water recreation
Wildlife habitat	Wildlife habitat
Preservation of rare & endangered species	Preservation of rare & endangered species
Migratory habitat	Migratory habitat
Wetlands habitat	Wetlands habitat
Spawning habitat	Municipal supply
Estuarine habitat	Industrial service supply
Marine habitat	Industrial process supply
Navigation	Agricultural supply
Commercial & sportfishing	Groundwater recharge
	Freshwater replenishment
	Warmwater habitat
	Coldwater habitat

Water Quality Problems and Issues

Permitted discharges:

- 30 NPDES discharges
- Four major discharges (POTWs, (one discharging to estuary, one to middle reaches, two into upper watershed)
- 11 minor discharges
- 15 discharges covered under general permits
- 114 dischargers covered under an industrial storm water permit
- 317 dischargers covered under a construction storm water permit

Increasing loads of nitrogen and salts in supplies of ground water threaten beneficial uses including irrigation and drinking water. Other threats to water quality include increasing development in floodplain areas which has necessitated flood control measures such as channelization that results in increased runoff volumes and velocities, erosion, and loss of habitat. In many of these highly disturbed areas the exotic giant reed (*Arundo donax*) is gaining a foothold.

Many of the smaller communities in this watershed remain unsewered. In particular, in the Agua Dulce area of the upper watershed, impacts on drinking water wells from septic tanks is a major concern. The community is undertaking a wellhead protection effort, with oversight by Board staff. Development pressure, particularly in the upper watershed, threatens habitat and the water quality of the river. The effects of septic system use in the Oxnard Forebay area is also of concern.

Types of permitted wastes discharged into the Santa Clara River Watershed:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) contaminated groundwater DCNWTRS	2 2	Minor General
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	5 5	Minor General
Nonhazardous (designated) noncontact cooling water DNONCON	1	Minor
Nonhazardous (designated) process waste (produced as part of industrial/manufacturing process) DPROCES	2	Minor
Nonhazardous (designated) stormwater runoff DSTORMS	1	Minor
Hazardous contaminated groundwater HCNWTRS	1	General
Nonhazardous (designated) domestic sewage & industrial waste DDOMIND	4 1	Major Minor
Nonhazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage NMISCEL	3	General
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage IMISCEL	1	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

Twenty of the 30 NPDES dischargers go into the mainstem of the Santa Clara River while the rest discharge to various tributaries or lakes.

Of the 114 dischargers enrolled under the general industrial storm water permit in the watershed, the largest numbers are located in the cities of Santa Clarita, Santa Paula and Valencia. There is a wide array of businesses represented with many being involved with auto wrecking and food packing. A similar number of sites are located in the upper and lower watershed.

There are currently 317 sites enrolled under the construction storm water permit; the majority of these sites are located in the upper watershed, especially within the cities of Santa Clarita and Valencia. About one-half of the sites are residential and about two-thirds are five acres or greater in size with six sites being at least 1,000 acres.

IMPAIRMENTS: Limited data (beyond mineral quality and nitrogen) is available for much of the Santa Clara River. The Santa Clara River Estuary and Beach is on the 2002 303(d) list for coliform while a portion of the river upstream of the estuary is listed for ammonia and coliform. Portions of the river have chloride exceedances. The Estuary is also listed for DDT in fish tissue. Two small lakes in the watershed are also on the 303(d) list for eutrophication, trash, DO, and pH problems. Two major spills of crude oil into the river have occurred in the early 1990s although recovery has been helped somewhat by winter flooding events. Natural oil seeps discharge significant amounts of oil into Santa Paula Creek.

The table below gives examples of typical data ranges which led to the listings.

Impairments	**Applicable Objective/Criteria**	**Typical Data Ranges Resulting in Impairment**	**303(d) Listed Waters/Reaches**
chloride	Basin Plan numeric objective: 80 – 100 mg/l	10 – 138 mg/l (mean of 105 ± 21)	Sespe Creek (tributary to Santa Clara River Reach 3) Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd Bridge) Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99) Santa Clara River Reach 3 (Freeman Diversion to A Street)
ammonia	Basin Plan narrative objective Basin Plan numeric objective: varies depending on pH and temperature but the general range is 0.53 – 2.7 mg/l of total ammonia (at average pH and temp.) in waters designated as WARM to protect against chronic toxicity and 2.3 – 28.0 mg/l to protect against acute toxicity	ND – 4.9 mg/l (mean of 1.4 ± 1.3)	Santa Clara River Reach 3 (Freeman Diversion to A Street) Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99)
nitrate + nitrite	Basin Plan numeric objective: no greater than 10 mg/l	0.3 – 15.4 mg/l (mean of 5.7 ± 2.4)	Wheeler Canyon/Todd Barranca Torrey Canyon Creek Brown Barranca/Long Canyon Mint Canyon Creek Reach 1 Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99)

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
org. enrichment/ low DO	Basin Plan narrative objective		Elizabeth Lake
	Basin Plan numeric objective: annual mean greater than 7.0 mg/l no single sample less than 5.0 mg/l	0.8 – 11.0 mg/l (mean of 7.7 ± 2.5)	
pH	Basin Plan numeric objective: 6.5 – 8.5 pH units	7.3 – 9.6 pH units (mean of 8.5 ± 0.7)	Elizabeth Lake Piru Creek (tributary to Santa Clara River Reach 4) Sespe Creek (tributary to Santa Clara River Reach 3)
odors	Basin Plan narrative objective		Lake Hughes
coliform	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml Beaches: total coliform not to exceed 1,000 MPN/100ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100ml at any time	20 – 24000 MPN/100ml	Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd Bridge) Santa Clara River Estuary Santa Clara River Reach 9 (Bouquet Cyn Rd to abv Lang Gaging)
sulfate	Basin Plan numeric objective: 600 mg/l	310 – 850 mg/l	Hopper Creek Pole Creek (tributary to Santa Clara River Reach 3) Wheeler Canyon/Todd Barranca
Total dissolved solids	Basin Plan numeric objective: 1300	630 – 1700 mg/l	Wheeler Canyon/Todd Barranca Hopper Creek Pole Creek (tributary to Santa Clara River Reach 3) Santa Clara River Reach 3 (Freeman Diversion to A Street)
Eutrophication	Basin Plan narrative objective		Elizabeth Lake Lake Hughes Munz Lake
algae	Basin Plan narrative objective		Lake Hughes
fish kills	Basin Plan narrative objective		Lake Hughes
trash	Basin Plan narrative objective		Elizabeth Lake Munz Lake Lake Hughes
ChemA*	National Academy of Science Guideline (tissue): 100 ng/g		Santa Clara River Estuary
toxaphene	State Board numeric objective (tissue): Max. Tissue Residue Level 9.8 ng/g		Santa Clara River Estuary

ChemA refers to the sum of the chemicals aldrin, dieldrin. Chlordane, endrin, heptachlor, heptachlor epoxide, HCH (including lindane), endosulfan, and toxaphene

COMPLETED TMDLS

- chlorides (completed by USEPA in 2003)
- nutrients (2004)

Stakeholder Groups

Santa Clara River Enhancement and Management Plan Steering Committee The 26-member Project Steering Committee is currently directing preparation of an Enhancement and Management Plan. The Committee consists of representatives of the following individuals and agencies:

Acton Town Council *	Los Angeles Department of Regional Planning – APIS
Aggregate Producers	Newhall Land & Farming Company
Agriculture/Private Land Ownership	Santa Clara Valley Property Owners Association
Beach Erosion Authority for Operations & Nourishment *	State of California Coastal Conservancy *
Castaic Lake Water Agency	State of California Department of Fish and Game *
Cities of Fillmore/Santa Paula *	State of California Department of Parks and Recreation *

City of Oxnard City of San Buenaventura * City of Santa Clarita * County of Ventura – Resource Management Agency * Friends of the Santa Clara River * (environmental organization umbrella group) Los Angeles County Flood Control District * Los Angeles County Sanitation District	State of California Department of Transportation * - District 7 State of California Water Quality Control Board – L.A. Region * United Water Conservation District U.S. Army Corps of Engineers * U.S. Fish & Wildlife Service * Valley Advisory Committee Ventura County Flood Control District *

- Additionally indicated support for the river study by signing a Memorandum of Cooperation

Six subcommittees worked with a consultant to collect the information necessary for a river management plan: agriculture, flood control, water resources, aggregate industry, recreation, and biology were the areas focused on. These subcommittees worked on determining river dynamics and areas where the interests of diverse groups overlap along the river; the critical issues areas were identified. Reports were developed by the subcommittees that provide background information, goals, and recommendations for the river on the issue areas. A series of computer-based maps have been produced, which are currently being used in a GIS overlay process to identify conflicts and opportunities and facilitate decisions regarding use of the river floodplain. A public review draft of the Santa Clara River Enhancement and Management Plan (SCREMP) is available http://sdgis.amec.com/scremp/index.htm. The SCREMP addresses management of the 500-year floodplain of the main river corridor.

Friends of the Santa Clara River This non-profit stakeholder group has been involved with watershed activities along the length of the river with a focus on the protection, enhancement, and management of the river's resources. More information about this group may be found at their website http://www.FSCR.org.

Santa Clarita Organization for Planning the Environment (SCOPE) This group has been involved with educating the public about planning and environmental issues, including those involving the river, particularly in the area around the Santa Clarita Valley. More information about this group may be found at their website http://www.scope.org/.

Santa Clara Estuary Work Group This group has been meeting over the past year and includes staff from the Regional Board, California Department of Fish and Game, California State Parks - Channel Coast District, and the Ventura Water Reclamation Plant. A Natural Resources Management Plan is being prepared for the State Parks land in and around the estuary and these entities are most involved with water quality and habitat issues as well as monitoring.

Significant Past Activities

Santa Clara River Enhancement and Management Plan development evolved as the result of the efforts of former Ventura County Supervisor Maggie Kildee, representatives of the Ventura Office of the U.S. Fish and Wildlife Service, and grant funding provided by the State Coastal Conservancy. As far back as 1991, it was becoming apparent that the many proposed and conflicting uses of the river were heading for problems of rather large proportions unless the agencies that regulated the river and the various stakeholders along the river agreed on a consensus plan to manage the river and its resources. The increasingly complex regulatory process along the river, involving protection of river ecology and natural processes, was becoming a more difficult environment for stakeholders wishing to stabilize banks, develop urban projects, or mine river aggregate deposits. The river is a very complex natural

system and agencies had been forced to be very conservative in analysis of projects because of incomplete understanding of the river's ecological processes. Large instream aggregate mining projects which had been proposed, plus several urban development projects in the making, led to the feeling that a giant "train wreck" was in store for the Santa Clara River. The options were to keep doing business-as-usual approaches, or to work together to develop a coordinated conservation plan for the river. Therefore, in 1991, Supervisor Kildee invited all concerned parties to participate in initiating the Plan. A Project Steering Committee was formed. Since that time, funding for consulting services associated with Plan development, totaling $510,000 to date, has been provided by the Coastal Conservancy, the State Wildlife Conservation Board, the U.S. Fish and Wildlife Service, the Cities of Santa Clarita and San Buenaventura, and both Ventura and Los Angeles County Flood Control Districts. In addition, a great deal of staff time and in-kind services have been contributed to this planning effort. This project also formed the primary basis for nomination of the Santa Clara River as an American Heritage River. Although the river is still under consideration, it has not yet been designated.

The Steering Committee began by identifying the river's critical issue areas. Reports were developed by subcommittees that provide background information, goals and recommendations for the river on the issue areas. A series of computer-based maps have been produced, which are currently being used in a Geographic Information Systems (GIS) overlay process to identify conflicts and opportunities and facilitate decisions regarding use of the river floodplain.

The Steering Committee initially identified nine main categories of critical resource issue areas and, over the past two years, subcommittees covering Biological Resources, Recreation, Water Resources, and Aggregate Mining have each developed reports providing background information, and goals and recommendations for their respective areas. In addition, two reports covering the History of the Santa Clara River and the Cultural Resources of the River have been published.

In April 1999, the Project Steering Committee released preliminary river-wide and reach-specific recommendations for public comment. River-wide recommendations include those involving issues such as public outreach, private property rights, water quality, water rights, saltwater intrusion, water supply, river gradient, public flood protection facilities, maintenance of design flow capacity, private flood protection, cultural resource protection, fish passage, habitat conservation priorities, biological management, control of exotics, biological mitigation, public access and recreation, recreational property acquisition, and permit streamlining.

The group has also developed draft resource-based ranking criteria for parcel acquisition. There is one such parcel acquisition, funded by the State Coastal Conservancy, currently being pursued. The proposed acquisition includes 213 acres of river bottom, river terrace, and riparian habitat. Staff will remain involved with the Plan's development and implementation. During the fall of 1999, the Project Steering Committee reviewed proposals from consultants to prepare a CEQA document for the Plan for the river.

One downside to this effort is that the study and plan were limited to the mainstem of the river, not the tributaries or other watershed areas outside of the 100-year floodplain. If additional resources can be found, the study area can be expanded throughout the watershed. This will increase the chance of successful protection of this watershed.

Other important community-based efforts include Ventura County's Agriculture Policy Working Group's Agricultural Land Preservation Program, the Heritage Valley Tourism Development Program, Santa Clara River Valley Historic/Cultural Preservation Programs and the City of Santa Clarita's River Corridor Plan.
In 1990, the Regional Board adopted Resolution No. 90-004 (**Drought Policy**) which had a term of three years and provided interim relief to dischargers who experienced difficulty meeting chloride objectives because of a state-wide drought. The policy adjusted effluent limits to the lesser of 1) 250 mg/l or 2) the chloride concentration in the water supply plus 85 mg/l. In 1995, the Regional Board extended the interim limits for three years and directed staff to develop a long-term solution to deal with the impact of changing water supply, especially during droughts. In 1997, the Regional Board adopted Resolution No. 97-002 (**Chloride Policy**) which set the chloride objective at 190 mg/l except in the Calleguas Creek and Santa Clara River Watersheds where, due to the great concern for protection of agriculture, staff were directed to determine the chloride concentrations sufficient to protect agricultural beneficial uses.

California State University, Fullerton, under contract with the Regional Board, completed a **GIS-based project** in the watershed during 2001 which involved verifying with Global Positioning Satellite (GPS) previous Regional Board sampling locations in the river. Digital photos and video of the locations were also taken and aerial photos were also taken. This information will augment the existing Regional Board GIS for that watershed.

UCLA was under contract with the State Board to provide data needed for establishment of **nutrient TMDLs** in several watersheds within the Region including Calleguas Creek, Santa Clara River, and Malibu Creek. By understanding the inter-relationships between water quality and habitat condition and the resulting effects that these interactions have on the biological communities of coastal watersheds, it was anticipated this research would further our understanding of the ecology of southern California watersheds. Besides providing information supporting the establishment of nutrient TMDLs for these three impaired coastal watersheds, the data collected were intended to provide insight into how these TMDLs might be complied with in the future. Three specific objectives of this project were: 1) investigate the relationships between water quality (e.g. nutrients), habitat quality, and the biological community, 2) investigate how water quality and biological communities change throughout particular target reaches representing different land uses, and 3) compare the relationships between water quality, habitat quality, and biological communities among different watersheds. The work was a continuation and extension of a Regional Environmental Monitoring and Assessment Program (R-EMAP) project in the Calleguas Creek Watershed. R-EMAP us part of a larger national effort by the USEPA to assess the condition of the nation's ecological resources.

Current Activities

CORE REGULATORY

Continuing core regulatory activities that will be integrated into the watershed management approach include (but are not limited to) necessary renewal/revision of NPDES permits and issuance of new permits. Compliance inspections, review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue.

The one POTW discharging to the estuary conducted a limited-term receiving monitoring program to investigate whether toxic constituents (to be regulated under the CA Toxics Rule) are accumulating or bioaccumulating in the estuary. More work is planned with regards to evaluating effects on the estuary.

Additionally, most urban areas in Ventura County, including this watershed, are implementing Best Management Practices (BMPs) under the Municipal Storm Water Permit (revised in 2000). The "Discharger" consists of the co-permittees Ventura County Flood Control District, the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks. The Discharger is required to implement the Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan (SQUIMP), which requires the implementation of BMPs to reduce the discharge of pollutants in storm water from new development and significant redevelopment. Other requirements of the Municipal Storm Water Permit include a public education program, an educational site inspection program for industrial and commercial facilities, program for construction sites, public agency activities, and a storm water monitoring program.

The storm water monitoring program has consisted of land-use based monitoring, receiving water and mass emission station monitoring, and bioassessment. The Discharger also participates in regional monitoring activities, such as the Storm Water Monitoring Coalition, organized by the Southern California Coastal Water Research Project. Furthermore, the Discharger participates in the development and implementation of volunteer monitoring programs in the Ventura Coastal watersheds.

The Santa Clara River receives municipal storm drain discharges from the City of Fillmore, City of Oxnard (part), City of San Buenaventura (part), City of Santa Paula, and unincorporated Ventura County (part).

MONITORING AND ASSESSMENT

The Santa Clara River was a focus for SWAMP monitoring (Phase I) in FY00/01 with Phase II work completed in FY01/02. Monitoring in this watershed emphasized stratified random sampling with the strata represented by stretches of river or tributary immediately upstream of confluences. Biological assessment work was a major component of the program.

The upper Santa Clara River is monitored by the County Sanitation Districts of Los Angeles County under NPDES permits for the Saugus and Valencia treatment plants. Somewhat downstream, between the towns of Piru and Saticoy, water quality in the surface and groundwater is monitored by United Water Conservation District. Mid-river receiving water data is provided by the City of Santa Paula treatment plant under an NPDES permit and occasionally by the City of Fillmore when they discharge to surface waters under an NPDES permit. Otherwise, the City of Fillmore provides groundwater data that has not yet been integrated into the watershed picture. At the river's terminus, some water quality data is available from the City of San Buenaventura under NPDES permit for discharge to ponds adjacent to the river. The monitoring supports compliance evaluation; it is not part of a program for nonpoint source identification or TMDL development. In conjunction with the receiving water monitoring, land-use based monitoring is carried out as part of the Ventura County Municipal Storm Water Program. There is a long stretch of the middle river (surrounded by private property) that has had little to no monitoring because of limited access.

Related to the SCREMP, Clean Water Act Section 205(j) grant monies have been awarded to the Ventura County Watershed Protection District for development of a comprehensive river monitoring plan. Additionally, an Army Corps of Engineers-sponsored watershed-wide planning effort will begin which will follow up on the intensive effort put into river corridor planning.

In addition, efforts to study impacts of chloride on groundwater supplies will require ongoing monitoring. A MOU has been prepared by staff and has been signed by several key stakeholders interested in this issue.

Ground water data are being collected by a number of agencies and should be compiled by the Fox Canyon Groundwater Management Agency. We should be acquiring some of this data over the next two years for use in our analysis of the Oxnard Plain nonpoint source contamination problems.

WETLANDS PROTECTION AND MANAGEMENT

In June 2001, the Coastal Conservancy approved use of Southern California Wetlands Recovery Project funds for acquisition of several parcels at the mouth of the river (wetlands, dunes and former riparian areas at the estuary).

The Santa Monica Mountains Conservancy is a state agency created by the Legislature in 1979 charged with primary responsibility for acquiring property with statewide and regional significance, and making those properties accessible to the general public. The Conservancy manages parkland in the Santa Monica Mountains, Santa Susana Mountains, the Simi Hills, the Santa Clarita Woodlands, the Whittier-Puente Hills, the Sierra Pelona, the Los Angeles River Greenway, the Rio Hondo, the Verdugo Mountains, the San Gabriel Mountains, and the San Rafael Hills. The agency's goals are to: 1) implement the Santa Monica Mountains Comprehensive Plan, 2) implement the Rim of the Valley Trails Corridor Master Plan, 3) implement the Los Angeles County River Master Plan, 4) further cooperation with local governments in the region to secure open space and parkland, and 5) expand education, public access, and resource stewardship components in a manner that best serves the public, protects habitat, and provides recreational opportunities.

NONPOINT SOURCE PROGRAM

Agriculture

There are a number of 303(d)-listed impairments in the watershed which may be attributable in part to agricultural practices, notably salts and nitrogen related as well as movement of historic pesticides. We will be focusing our agricultural grant priorities for the upcoming application period on a number of areas of concern in the Region including development of an agricultural "strategy", education and outreach programs and implementation of management measures relative to nutrient management and erosion control.

Groundwater

The Oxnard Forebay is a prime groundwater recharge area that is impacted by nitrogen discharges, mainly from densely populated communities using septic systems, and agricultural areas. The Regional Board undertook a study of septic systems in the area during FY98/99; in August 1999 the Board adopted

a Basin Plan amendment to prohibit septic systems in the Oxnard Forebay. The amendment immediately prohibits the installation of new septic systems or the expansion of existing septic systems on lot sizes of less than five acres. Discharges from septic systems on lot sizes of less than five acres must cease by January 1, 2008. This prohibition will affect up to 3,000 septic systems and ten to fifteen thousand people.

BASIN PLANNING

Chloride impairments in certain reaches of the river initially led to formation of a chloride committee to conduct a chloride TMDL. This stemmed from issues raised during development of a chloride policy for the region. Growers expressed concerned about increased chloride and effects on salt-sensitive crops, such as avocados. Staff went to the Board in December 2000 with two resolutions: one to extend the interim chloride limitation for discharges to the river until December 7, 2001; the other to amend the Basin Plan chloride objective for certain reaches in the river. The Board adopted the extension of the interim limitation at the December meeting, raised the Basin Plan objectives in Reach #3 from 80 to 100 mg/l, and determined the chloride objective for chloride in reaches #7 and #8 should remain unchanged from 100 mg/l. Reaches #3, #7, and #8 are currently 303(d)-listed for chloride. Reach #3, now with a higher objective for chloride, was still listed as impaired for chlorides in the 2002 303(d) list. The Board has directed staff to complete a chloride TMDL on Reaches #7 and #8 in a timely manner.

The 2001 Triennial Review identified adoption of TMDLs as Basin Plan amendments the highest priority issue that can be accomplished with current levels of funding. Approximately 0.5 PYs/TMDL would be utilized.

Basin Planning activities will also include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

The Regional Board will remain involved with future phases of the Santa Clara River Enhancement and Management Plan effort.

Our efforts to involve stakeholders shall also include exploration of funding options (especially for implementation of nonpoint source measures) and continuation of other outreach activities, such as speeches, meetings, and participation in environmental events. We shall continue out involvement in the watershed group's efforts to develop and implement a watershed management plan.

We will maintain involvement with stakeholder activities and pursue funding options, especially those involving implementation of nonpoint source measures as well as other outreach activities such as speeches, meetings, and participation in environmental events. With additional resources we propose conducting a number of education and outreach activities including holding regional workshops and conferences with other Regional Boards as well as experts in the field. We also propose further refining our agricultural strategy to clearly delineate our goals and objectives with regards to reducing nonpoint source pollution from this sector and potential triggers for moving through the tiers.

The complexity of this watershed system, coupled with divergent goals among upstream developers, downstream farmers, and environmental interests, necessitate that extra planning resources be allocated to this watershed. It is imperative that the Regional Board actively participate in dialogue regarding water quality issues during the near-term, to ensure proper planning and development of the long-term projects that are being proposed. Among the various approaches that will be taken by the Regional Board is more active participation in CEQA and other planning efforts in this watershed to ensure protection of this valuable water resource, especially in light of the high growth projections in the floodplains and recharge areas of this watershed.

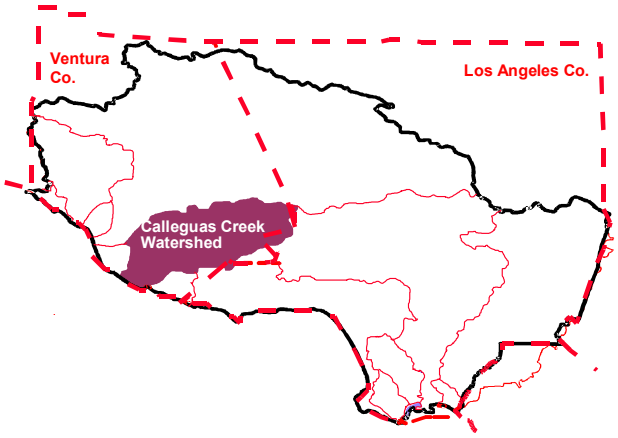
Potential Mid- to Long-term Activities

- Evaluation of potential impacts from mining in and around the river
- Evaluation of impacts from large-scale development in the upper river
- Identification of conflicts between ground water supply and water quality in lower watershed
- Identification of water quality and quantity issues for steelhead trout recovery
- Consideration of TMDL-related issues
- Implementation of watershed-wide biological monitoring which is a long-term goal for all of our watersheds

2.8 CALLEGUAS CREEK WATERSHED

This watershed will be targeted in FY06/07.

Overview of Watershed



Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Beneficial Uses in watershed:

Estuary	*Above Estuary*
Wildlife habitat	Wildlife habitat
Contact & noncontact water recreation	Contact & noncontact water recreation
Estuarine habitat	Industrial service supply
Marine habitat	Industrial process supply
Preservation of rare & endangered species	Preservation of rare & endangered species
Navigation	Agricultural supply
Preservation of biological habitats	Groundwater recharge
Wetlands habitat	Wetlands habitat
Migratory & spawning habitat	Freshwater replenishment
Shellfish harvesting	Warmwater habitat

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon ground water for drinking.

Water Quality Problems and Issues

Aquatic life in both Mugu Lagoon and the inland streams of this watershed has been impacted by pollutants from nonpoint sources. DDT, PCBs, other pesticides, and some metals have been detected in both sediment and biota collected from surface waterbodies of this watershed. Additionally, ambient toxicity has been revealed in several studies from periodic toxicity testing in the watershed (ammonia from POTWs and pesticides such as diazinon and chlorpyrifos are implicated). Fish collected from Calleguas Creek and Revolon Slough exhibit skin lesions and have been found to have other histopathologic abnormalities. High levels of minerals and nitrates are common in the water column as well as in the groundwater. Sediment toxicity is also elevated in some parts of the lagoon. Reproduction is impaired in the resident endangered species, the light-footed clapper rail due to elevated levels of DDT and PCBs. Overall, this is a very impaired watershed. It appears that the sources of many of these pollutants are agricultural activities (mostly through continued disturbance and erosion of historically contaminated soils), which cover approximately 25% of the watershed along the inland valleys and coastal plain, although the nearby naval facility has also been a contributor. Other nonpoint sources include residential and urban activities, which are present over approximately 25% of the watershed. The remaining 50% of the watershed is still open space although there is a severe lack of benthic and riparian habitat.

Permitted discharges:

- 24 NPDES discharges; five major discharges (POTWs); six minor discharges; thirteen discharges covered by general permits
- 73 dischargers covered under an industrial storm water permit
- 276 dischargers covered under construction storm water permit
- Municipal storm water permit

Mugu Lagoon as well as the Calleguas Creek Estuary is considered a toxic hot spot under the Bay Protection and Toxic Cleanup Program (BPTCP) due to reproductive impairment (the endangered clapper rail), exceedance of the state Office of Environmental and Health Hazard Assessment (OEHHA) advisory level for mercury in fish, and exceedance of the NAS guideline level for DDT in fish, sediment concentrations of DDT, PCB, chlordane, chlorpyrifos, sediment toxicity and degraded benthic infaunal community.

Primary issues related to POTW discharges include ammonia toxicity and high mineral content (i.e., salinity), the latter, in part, due to imported water supplies.

Types of permitted wastes discharged into the Calleguas Creek Watershed:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) contaminated groundwater DCNWTRS	1 3	Minor General
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	2 2	Minor General
Hazardous contaminated groundwater HCNWTRS	3 2	Minor General
Nonhazardous (designated) domestic sewage DDOMEST	1	Major
Nonhazardous (designated) domestic sewage & industrial waste DDOMIND	3 2	Major Minor
Hazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage HMISCEL	1	General
Nonhazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage NMISCEL	1	General
Nonhazardous washwater waste (photo reuse washwater, vegetable washwater) NWSHWTR	1	Minor
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage IMISCEL	1	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

Discharges are fairly evenly spread around the watershed; six of the 24 NPDES discharges go to the Arroyo Conejo, while discharge to Revolon Slough and lesser numbers discharge to the Creek's various reaches.

Of the 73 dischargers enrolled under the general industrial storm water permit in the watershed, the largest numbers are located in the cities of Simi Valley and Camarillo. There is a diverse mix of industries represented including auto wrecking, sand and gravel operations, production of electronics, transit, and trucking.

There are 276 construction sites enrolled under the construction storm water permit. About one-half of the sites are residential and about one-half are five acres or larger in size up to 1,000 acres. Most of the sites are located in Camarillo, Simi Valley, and Thousand Oaks.

The table below gives examples of typical data ranges which led to the 2002 303(d) listings.

IMPAIRMENTS:

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
nitrate + nitrite	Basin Plan numeric objective: no greater than 10 mg/l	11.9 - 70.0 mg/l (mean of 48.5 ± 13)	Calleguas Creek Reach 3 (previously Potrero Rd upstream to confluence with Conejo Ck) Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Fox Barranca (tributary to Calleguas Creek Reach 6)
Nitrate (NO3)			Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1)
Nitrate as N			Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1)
Nitrite as N			Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1)
nitrogen	Basin Plan numeric objective: no greater than 10 mg/l		Rio de Santa Clara/Oxnard Drain #3 Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Duck pond agric. drain/Mugu Drain/Oxnard Drain #2
ammonia	Basin Plan narrative objective		Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo N. Fork) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2)
	Basin Plan numeric objective: varies depending on pH and temperature but the general range is 0.53 - 2.7 mg/l of total ammonia (at average pH and temp.) in waters designated as WARM to protect against chronic toxicity and 2.3 - 28.0 mg/l to protect against acute toxicity	0.1 - 20. 2 mg/l (mean of 2.7 ± 3.6)	
algae	Basin Plan narrative objective		Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2)
low DO/org. enrichment	Basin Plan narrative objective		Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork)
	Basin Plan numeric objective: annual mean greater than 7.0 mg/l no single sample less than 5.0 mg/l	2.6 - 10.9 mg/l (mean of 7.0 ± 1.8)	
chlorpyrifos (tissue)	Basin Plan narrative objective	10 – 100 ng/g	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel)
toxicity	Basin Plan narrative objective	0 - 100 % survival	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2) Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Duck pond agric. drain/Mugu Drain/Oxnard Drain #2
hexachlorocycloh exane (HCH) (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level 2.5 ng/g	4 ng/g	Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1)

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
Chloride	Basin Plan numeric objective: 150 mg/l	78 - 230 mg/l (mean of 173 ± 31)	Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Calleguas Creek Reach 3 (previously Potrero Rd upstream to confluence with Conejo Ck) Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2) Calleguas Creek Reach 8 (was Tapo Canyon Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2)
Boron	Basin Plan numeric objective: 1.0 mg/l	0.4 - 1.4 mg/l (mean of 1.1 ± 0.3)	Fox Barranca (tributary to Calleguas Creek Reach 6) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2) Calleguas Creek Reach 8 (was Tapo Canyon Reach 1)
Sulfate	Basin Plan numeric objective: 250 mg/l	185 - 1000 mg/l (mean of 642 ± 278)	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Fox Barranca (tributary to Calleguas Creek Reach 6) Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2) Calleguas Creek Reach 8 (was Tapo Canyon Reach 1) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2) Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo N. Fork) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3)
total dissolved solids	Basin Plan numeric objective 850 mg/l	460 - 1470 mg/l (mean of 1023 ± 246)	Calleguas Creek Reach 3 (previously Potrero Rd upstream to confluence with Conejo Ck) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Fox Barranca (tributary to Calleguas Creek Reach 6) Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2) Calleguas Creek Reach 8 (was Tapo Canyon Reach 1) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2) Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo N. Fork) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3)
DDT (tissue & sediment)	Sediment quality guidelines: 45 – 52 ng/g State Board numeric objective (tissue): Max. Tissue Residue Level 32.0 ng/g	37.5 - 1648.0 ng/g (sediment) 145.9 - 4800 ng/g (tissue)	Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo N. Fork) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Duck pond agric. drain/Mugu Drain/Oxnard Drain #2 Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2) Rio de Santa Clara/Oxnard Drain #3

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
Chlordane (tissue and/or sediment)	Sediment quality guidelines: 4 – 6 ng/g	3.4 - 45.0 ng/g (sediment)	Rio de Santa Clara/Oxnard Drain #3 Duck pond agric. drain/Mugu Drain/Oxnard Drain #2
	State Board numeric objective (tissue): Max. Tissue Residue Level 8.0 – 8.3 ng/g	28.5 - 265 ng/g (tissue)	Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 12 (was Conejo Creek/Arroyo Conejo N. Fork)
ChemA* (tissue)	National Academy of Science Guideline (tissue): 100 ng/g	695.9 - 1910.1 ng/g (tissue)	Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2) Duck pond agric. drain/Mugu Drain/Oxnard Drain #2 Rio de Santa Clara/Oxnard Drain #3
Dacthal (sediment)	Basin Plan narrative objective	ND - 120.1 ng/g (sediment)	Calleguas Creek Reach 5 (was Beardsley Channel)
Endosulfan (tissue and/or sediment)	Basin Plan narrative objective	ND - 144.2 ng/g (sediment)	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel)
	State Board numeric objective (tissue): Max. Tissue Residue Level 250 ng/g	42.3 - 294.0 ng/g (tissue)	Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2)
Toxaphene (tissue and/or sediment)	Basin Plan narrative objective	ND - 1900 ng/g (sediment)	Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.)
	State Board numeric objective (tissue): Max. Tissue Residue Level 9.6 – 9.8 ng/g	238 – 12000 ng/g (tissue)	Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2) Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 13: Conejo Creek South Fork (was Conejo Creek Reach 4 and part of Reach 3) Duck pond agric. drain/Mugu Drain/Oxnard Drain #2 Rio de Santa Clara/Oxnard Drain #3
Dieldrin (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level 0.65 ng/g	4.7 - 6.6 ng/g (tissue)	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1)
organophosphorus pesticides			Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2)
sediment toxicity	Basin Plan narrative objective	14 - 71 % survival	Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Rio de Santa Clara/Oxnard Drain #3

		Duck pond agric. drain/Mugu Drain/Oxnard Drain #2

* ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, HCH (including lindane), endosulfan, and toxaphene

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
siltation	Basin Plan narrative objective		Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 3 (previously Potrero Rd upstream to confluence with Conejo Ck) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2) Calleguas Creek Reach 8 (was Tapo Canyon Reach 1) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3)
Nickel			Calleguas Creek Reach 1 (was Mugu Lagoon)
copper	USEPA water quality criteria: 2.9 ug/l		Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2)
zinc	USEPA water quality criteria: 86 ug/l		Calleguas Creek Reach 1 (was Mugu Lagoon)
Mercury	USEPA water quality criteria: 2.1 ug/l		Calleguas Creek Reach 1 (was Mugu Lagoon)
Selenium	USEPA water quality criteria: 5.0 ug/l	11.0 ug/l (maximum)	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.)
PCBs (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level 5.3 ng/g	16.8 – 110.7 ng/g (tissue)	Calleguas Creek Reach 1 (was Mugu Lagoon) Calleguas Creek Reach 2 (estuary to Potrero Rd - was Calleguas Creek Reaches 1 and 2) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Rio de Santa Clara/Oxnard Drain #3
Fecal coliform	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml		Calleguas Creek Reach 10: Conejo Ck-Hill Canyon (was part of Conejo Creek Reaches 2 and 3, and lower Conejo Crk/Arroyo Conejo N Fork) Calleguas Creek Reach 11: Arroyo Santa Rosa (was part of Conejo Creek Reach 3) Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2) Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2) Calleguas Creek Reach 9A (was lower part of Conejo Creek Reach 1) Calleguas Creek Reach 9B (was part of Conejo Creek Reaches 1 and 2)
Trash	samples in 30 days and not more than 10,000 MPN/100ml at any time		Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Ave.) Calleguas Creek Reach 5 (was Beardsley Channel)

COMPLETED TMDLS

- Chlorides (2002)
- Nutrients (2003)

CURRENTLY SCHEDULED TMDLS:

- organics-FY05/06
- metals-FY06/07

Stakeholder Groups

Calleguas Creek Watershed Management Committee and Technical Subcommittees: Recognizing that many of the water quality problems in the lagoon stem from land use practices and pollutant sources above the lagoon, members of these committees meet regularly to exchange data and discuss coordinated approaches to solving the many problems in this watershed, including development of a watershed management plan. The watershed group consists of about 130 stakeholders who have been meeting since November 1996 with the purpose of developing a watershed management plan. As we expect that much effort will need to be focussed on resolving agricultural and flood control issues, a concerted effort to include appropriate stakeholders. Besides the main management committee of stakeholders, five technical subcommittees deal with more specific issues such as water quality, flood protection/ sediment management, habitat/open space/recreation, public outreach, and land use. A Steering Committee attends to the details of management plan development. The full Management Plan Committee meets on a quarterly basis, generally conducting business in a half-day session. Staff have been and will continue to work with these committees. For further information concerning this group, please visit their website at http://www.calleguas.com/cc.htm.

A number of the above committee members were also on the *Mugu Lagoon Task Force* which was formed in 1990 in response to concerns about sedimentation filling in Mugu Lagoon which is at the mouth of the Calleguas Creek Watershed. A major focus of the early meetings was exchange of information on the extent of sedimentation with related concerns such as pesticide transfer. A sediment and erosion control plan was prepared for the Ventura County RCD by the U.S. Natural Resource Conservation Service (USNRCS) using Coastal Conservancy funds ("Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon", May 1995). This group is not currently meeting; however, information gained from this effort continues to be used by the other Calleguas Watershed Committees.

Significant Past Activities

CORE REGULATORY

The majority of Calleguas Creek Watershed permits were revised in June 1996. This watershed, as well as the Ventura River Watershed, were pilot watersheds in our implementation of the watershed management approach. The Ventura County Municipal Stormwater NPDES Permit had most recently been adopted in 2000. The watershed was targeted again for NPDES permit renewals in FY01/02.

MONITORING AND ASSESSMENT

As the first integrated watershed monitoring program in the Region, the six POTWs in the watershed each implemented a portion (Characterization Study) in 2000 which also included other agencies in the effort. In conjunction with the receiving water monitoring, land-use based monitoring was done as a part of the Ventura County Municipal Storm Water Program. The monitoring supported compliance valuation, nonpoint source identification, and potential TMDL development. The expanded monitoring by the dischargers also served to evaluate beneficial uses.

Calleguas Creek was a focus for SWAMP monitoring in FY00/01 as the watershed was targeted in the rotating watershed cycle. Since extensive monitoring has already occurred here, particularly in the lower watershed, a more directed approach to sampling site selection was taken.

A short-term watershed-wide regional monitoring program was created to fill in data gaps and eliminate duplicative and unnecessary monitoring. POTWs contributed significant resources to do a surface and ground water characterization study. It also served to assess nonpoint source pollution from a variety of land uses.

UCLA was under contract with the State Board to provide data needed for establishment of nutrient TMDLs in several watersheds within the Region including Calleguas Creek, Santa Clara River, and Malibu Creek. By understanding the inter-relationships between water quality and habitat condition and the resulting effects that these interactions have on the biological communities of coastal watersheds, this research was intended to further our understanding of the ecology of southern California watersheds. Besides providing information supporting the establishment of nutrient TMDLs for these three impaired coastal watersheds, the data collected would provide insight into how these TMDLs might be complied with in the future. Three specific objectives of this project were: 1) investigate the relationships between water quality (e.g. nutrients), habitat quality, and the biological community, 2) investigate how water quality and biological communities change throughout particular target reaches representing different land uses, and 3) compare the relationships between water quality, habitat quality, and biological communities among different watersheds. The work was a continuation and extension of a Regional Environmental Monitoring and Assessment Program (R-EMAP) project in the watershed. R-EMAP us part of a larger national effort by the USEPA to assess the condition of the nation's ecological resources.

BASIN PLANNING

In 1990, the Regional Board adopted Resolution No. 90-004 (**Drought Policy**) which had a term of three years and provided interim relief to dischargers who experienced difficulty meeting chloride objectives because of a state-wide drought. The policy adjusted effluent limits to the lesser of 1) 250 mg/l or 2) the chloride concentration in the water supply plus 85 mg/l. In 1995, the Regional Board extended the interim limits for three years and directed staff to develop a long-term solution to deal with the impact of changing water supply, especially during droughts. In 1997, the Regional Board adopted Resolution No. 97-002 (**Chloride Policy**) which set the chloride objective at 190 mg/l except in the Calleguas Creek and Santa Clara River Watersheds where, due to the great concern for protection of agriculture, staff were directed to determine the chloride concentrations sufficient to protect agricultural beneficial uses.

NONPOINT SOURCE PROGRAM

Work on nonpoint source problems in the watershed has been a long-term effort, initiated in 1990, with the support of 319(h) funds and other funding from, and support by, stakeholders. The 319(h) grant projects, special studies, and other activities that have been completed to date include:

- ***Irrigation Demonstration Project***: In 1994, the Ventura County Resource Conservation District successfully completed an irrigation project that demonstrated the water quality and conservation benefits of drip irrigation. This project was funded through a 319(h) grant.

- ***Toxicity Testing***: In order to detect sources of toxicity, we had collected water samples under three sequential studies (toxicity testing by UC Davis). Results of this sampling indicated sporadic toxicity, generally during wet weather seasons, with strong implication of organophosphate pesticides. A peer-reviewed paper on the results is pending.

- ***Calleguas Creek Watershed Treatment – Phases I and II***: The Ventura County Resource Conservation District served as contractor for this project which focused on Best Management Practices that involved small, individual landowners/ farmers. This demonstration project was designed to implement streambed protection practices. The two phases were funded through 319(h) grants.

Current Activities

The following is a summary of current regional board activities in the Calleguas Creek Watershed which are expected to continue as part of the Watershed Management Initiative.

CORE REGULATORY

Current regulatory activities include compliance inspections, review of monitoring reports, response to complaints, and enforcement actions, as needed.

Most urban areas in Ventura County, including this watershed, are implementing Best Management Practices (BMPs) under the Municipal Storm Water Permit (revised in 2000). The "Discharger" consists of the co-permittees Ventura County Flood Control District, the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks. The Discharger is required to implement the Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan (SQUIMP), which requires the implementation of BMPs to reduce the discharge of pollutants in storm water from new development and significant redevelopment. Other requirements of the Municipal Storm Water Permit include a public education program, an educational site inspection program for industrial and commercial facilities, program for construction sites, public agency activities, and a storm water monitoring program.

The Calleguas Creek receives municipal storm drain discharges from the City of Camarillo, City of Moorpark, City of Simi Valley, City of Thousand Oaks (part), and unincorporated Ventura County (part).

The storm water monitoring program has consisted of land-use based monitoring, receiving water and mass emission station monitoring, and bioassessment. The Discharger also participates in regional monitoring activities, such as the Storm Water Monitoring Coalition, organized by the Southern

California Coastal Water Research Project. Furthermore, the Discharger participates in the development and implementation of volunteer monitoring programs in the Ventura Coastal watersheds.

Regulation of groundwater protection activities is intended to eventually become fully integrated into the watershed management approach; currently, groundwater monitoring (for POTWs using ponds) is being coordinated with surface water monitoring.

MONITORING AND ASSESSMENT

The BPTCP has identified the lagoon and tidal prism as "toxic hot spots" based on sediment contamination. Staff have completed a preliminary cleanup plan for the areas which was adopted as part of a statewide consolidated plan by the State Board in June 1999. Cleanup/remediation alternatives identified include dredging, in-situ capping, and treatment; however, dedicated funding for cleanup activities has not been provided by the state. Continuing Regional Board activities include working with stakeholders to further characterize historical sources of pollution as well as the extent of existing contributions. While remediation of the lagoon (as part of a military facility) may proceed on its own timeline, in general, there is a concerted effort by all stakeholders to prepare a comprehensive watershed management plan to address all problems in the watershed.

The Calleguas Creek Watershed Management Plan Habitat/Recreation and Land Use Subcommittees are jointly working on aspects of a Watershed Evaluation Study that is scheduled to be finished in 2002. This is a GIS-based effort with the goals of identifying high quality habitat and those areas that would help link them, the current level of protection, land ownership, and information from local entities land use plans. Another goal is to make the information available via the Internet.

NONPOINT SOURCE PROGRAM

We expect that stakeholders will continue work on developing a watershed management plan, which will include measures for reducing pollutants from nonpoint sources. Accordingly, our efforts in the Calleguas Creek watershed will focus on continuing the nonpoint source phase of the watershed cycle, including integrating results of our on-going nonpoint source efforts. The 319(h) grant projects, special studies, and other activities that are currently on-going include:

319(h) Grants

Calleguas Creek Water Quality Monitoring Program: The Wishtoyo Foundation received 319(h) grant funds in 2001 to educate and train volunteers to conduct a citizen monitoring program in the watershed. The goal is to measure the effectiveness of BMPs created to manage the flow of nutrients, pesticides, and sediments. Bioassessments will also be conducted.

We continue to support as high priorities for grant funding projects relating to implementation of TMDLs, habitat enhancement/restoration, and reduction of pollutants from agricultural activities.

Other NPS Activities

Our efforts to involve stakeholders also shall include exploration of funding options (especially for implementation of nonpoint source measures) and continuation of other outreach activities, such as speeches, meetings, and participation in environmental events.

BASIN PLANNING

The 2001 Triennial Review identified as the highest priority adoption of TMDLs as Basin Plan amendments. This activity is currently funded with an expected 0.5 PYs/TMDL utilized. Another priority basin planning issue is continued work to determine the scope of water quality impacts from agricultural runoff in the Region. The majority of agricultural activities occur in the Calleguas Creek Watershed, especially in the Oxnard Plain and in the nearby foothills. Development of solutions to any impacts is also a high priority and will be a major concern of the nonpoint source program and, by extension, the watershed committee and subcommittees which will be addressing this as well as other problems. An evaluation of salt-sensitive agricultural resources will be done as part of the chloride TMDL.

WETLANDS PROTECTION AND MANAGEMENT

The Southern California Wetlands Recovery Project considers the lower Conejo Creek acquisition a high priority project for funding. The Habitat Subcommittee of the Calleguas Creek Watershed Plan Committee has also approved the acquisition as a priority.

A wetlands restoration plan for the watershed has been prepared (with Coastal Conservancy and USEPA funding) by a local consultant through the Habitat Subcommittee. This document is available on the Calleguas Creek Watershed Management Plan website at http://www.calleguas.com/ccbrochure/cc.htm. The next step in the process, completion of a Wetlands Restoration Feasibility Study, is ongoing.

The Santa Monica Mountains Conservancy is a state agency created by the Legislature in 1979 charged with primary responsibility for acquiring property with statewide and regional significance, and making those properties accessible to the general public. The Conservancy manages parkland in the Santa Monica Mountains, Santa Susana Mountains, the Simi Hills, the Santa Clarita Woodlands, the Whittier-Puente Hills, the Sierra Pelona, the Los Angeles River Greenway, the Rio Hondo, the Verdugo Mountains, the San Gabriel Mountains, and the San Rafael Hills. The agency's goals are to: 1) implement the Santa Monica Mountains Comprehensive Plan, 2) implement the Rim of the Valley Trails Corridor Master Plan, 3) implement the Los Angeles County River Master Plan, 4) further cooperation with local governments in the region to secure open space and parkland, and 5) expand education, public access, and resource stewardship components in a manner that best serves the public, protects habitat, and provides recreational opportunities. Additional information on their priorities may be found at http://www.smmc.ca.gov/.

DOD SITE CLEANUP PROGRAM

The Regional Board is working with the Department of Toxic Substances Control (DTSC) to investigate soil and groundwater quality. Sites currently under assessment/remediation include Mugu Lagoon, a former landfill, the Naval Exchange gas station, two Installation Restoration Program (IRP) sites, numerous underground storage tanks, and the former oxidation sewage ponds.

The Navy disposed of inert, contaminated and hazardous wastes to an unlined unpermitted landfill constructed by depositing and compacting wastes into Calleguas Creek. An erosion berm was installed as an interim remedial measure to prevent further erosion of the former landfill by storm water flowing through the creek during storm events. Long-term groundwater monitoring will be required for this site. Sediments and surface water at IRP Site 5 are contaminated with chrome. An initial emergency removal action (sediment excavation) failed to adequately remediate all impacted sediments and additional sediment remediation and surface water monitoring is ongoing.

Soil and groundwater at IRP Site 24 is contaminated with chlorinated solvents. Groundwater is being treated by implementation of a new biodegradation technology. It is not yet determined to what extent groundwater remediation or monitoring will be required to restore this site.

It is anticipated the Navy will implement a base-wide groundwater/surface water investigation to evaluate the overall groundwater and surface water quality, evaluate the interactions of surface water and groundwater, and determine the cumulative risk of multiple groundwater-surface water contamination sites on the overall water quality of the area and the risk to human health and the environment.

Prior to 1979, the Navy was allowed to discharge partially treated wastewater to surface water oxidation ponds that were constructed in the Calleguas Creek tidal prism. The ponds were unlined and allowed to percolate unevaporated water to the underlying groundwater, which is located about four feet below grade. The Regional Board rescinded the Navy's discharge permit in 1979 and required the Navy to pump all wastewater to the Oxnard POTW. However, periodic unpermitted discharges of wastewater continued to the ponds during planned repairs of the wastewater discharge line and wastewater overflow conditions, which occurred during heavy rains.

To prevent additional wastewater discharges to the ponds, the Regional Board issued a Cleanup and Abatement Order to the Navy in 1998 directing the Navy to cease all unpermitted discharges, construct a lined emergency wastewater retention basin, upgrade the wastewater discharge line, and remove the sludge that has accumulated in the ponds.

Current funding for the investigation and remediation of contaminated solids, surface water and groundwater at the base is through the DoD/CalEPA funding agreement; however, this funding is not satisfactory for the investigation or control of contaminants from upstream sources for the protection of Mugu Lagoon and continued funding cuts have had significant impacts on the level of oversight by Regional Board staff on these areas.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

NPDES Permits in the watershed will come up for renewal in FY 2003/04. In the meantime, core regulatory activities will focus on permit compliance, monitoring report review, and enforcement as needed. In addition, integration of stormwater and nonpoint source issues will continue. Members of the watershed team will be involved with periodic updates of the State of the Watershed Report. Additionally, there will be on-going interaction with stakeholders and followup on goals established during the permit renewal phase. Pending results from the discharger pollutant characterization study, a decision on waste load and load allocations will be pursued.

A review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

We shall have made significant progress later in this watershed's first cycle, toward identifying and assessing problems (through the characterization study) and involving stakeholders. At that point we (and the stakeholders) may also enough information to get a headstart on establishing load allocations for certain pollutants of concern.

Additional monitoring and assessment tasks include continued involvement in updates to the baseline State of the Watershed Report, focusing on filling data gaps and evaluating cumulative impacts as monitoring data become available from dischargers, evaluating the results of the SWAMP monitoring, follow-up on pollutants identified through toxicity identification evaluations, implement TMDLs to actually begin to solve problems found through monitoring, and implementing the municipal storm water program.

Our efforts to involve stakeholders shall also include exploration of funding options (especially for implementation of nonpoint source measures) and continuation of other outreach activities, such as speeches, meetings, and participation in environmental events. We shall continue our involvement in the watershed group's efforts to develop and implement a watershed management plan.

We will maintain involvement with stakeholder activities and pursue funding options, especially those involving implementation of nonpoint source measures (coordinate grant activities) as well as other outreach activities such as speeches, meetings, and participation in environmental events. As resources permit, we will also work with stakeholders to implement provisions of the Coastal Zone Act Reauthorization Amendments.

Potential Mid- to Long-term Activities

In the long-term, activities will include continued participation in both internal and external watershed planning efforts and further implementation of watershed-specific solutions. Several Basin Planning issues will be addressed through the Characterization Study and watershed planning efforts. More resources are needed for these activities.

Other mid- to long-term issues include:

- Beneficial uses: Studies to evaluate beneficial use issues.
- Site specific objectives: Review studies conducted by dischargers or other watershed interests.
- Land use planning: Integrate water supply and quality issues with local land use planning and management.
- Groundwater: Integrate inter-related ground and surface waters--optimizing protection for both.
- Flood control: Institute better coordination of multi-agency reviews of environmental impacts for flood control and development projects, including the consideration of regional mitigation programs. Optimize the use of environmentally-friendly flood control facilities.

- Implementation of watershed-wide biological monitoring is a long-term goal for all of our watersheds.

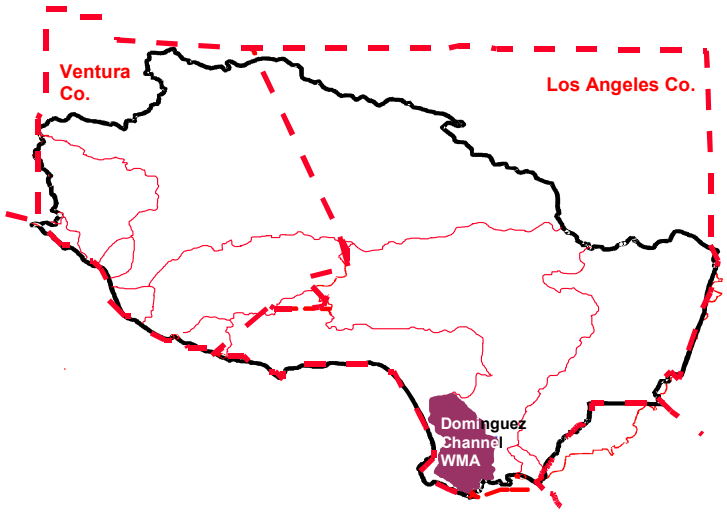
Review and comment on watershed issues in CEQA documents (for the highest priority projects) will also continue; however, this is currently an unfunded program.

Under the BPTCP, we estimated that about 20% of the Western Arm and 10% of the Eastern Arm of Mugu Lagoon contain contaminated sediments (about 725,000 cubic yards). We estimate that about 3 miles of Calleguas Creek contains 50,000 to 100,000 cubic yards of contaminated sediments. We want to work with local groups to develop remediation plans. Due to sensitive nature of Mugu Lagoon, we would suggest no action or in-situ treatment, rather than dredging, as remediation options. Treatment is expensive (probably would exceed $100 per cubic yard). Dredging could be used to remediate Calleguas Creek, although finding a suitable disposal site could be difficult; it would cost $1 to 5 million.

2.9 DOMINGUEZ CHANNEL AND LOS ANGELES/LONG BEACH HARBORS WMA

This watershed will be targeted in FY07/08.

Overview of WMA



The Los Angeles and Long Beach Harbors are located in the southern portion of the Los Angeles Basin. Along the northern portion of San Pedro Bay is a natural embayment formed by a westerly extension of the coastline which contains both harbors, with the Palos Verdes Hills the dominant onshore feature. Historically, the area consisted of marshes and mudflats with a large marshy area, Dominguez Slough, to the north, and flow from the Los Angeles River entering where Dominguez Channel now drains. Near the end of last century and during the beginning of this one, channels were dredged, marshes were filled, wharves were constructed, the Los Angeles River was diverted, and a breakwater was constructed in order to allow deep draft ships to be directly offloaded and products be swiftly moved. The Dominguez Slough was completely channelized and became the drainage endpoint for runoff from a highly industrialized area. Eventually, the greater San Pedro Bay was enclosed by two more breakwaters and deep entrance channels were dredged to allow for entry of ships with need of 70 feet of clearance. The LA/LB Harbor complex together is now one of the largest ports in the country.

Both harbors are considered to be one oceanographic unit. Despite its industrial nature, contaminant sources, and low flushing ability, the inner harbor area supports fairly diverse fish and benthic populations and provides a protected nursery area for juvenile fish. The California least tern, an endangered species, nests in one part of the harbor complex. Some wetlands do persist in the Machado Lake area.

Beneficial Uses in WMA

Dominguez Channel (above estuary)	*Dominguez Channel (in estuary)*
Noncontact water recreation	Contact & noncontact water recreation
Preservation of rare & endangered species	Preservation of rare & endangered species
	Industrial water supply
	Navigation
	Commercial & sportfishing
	Marine habitat
	Estuarine habitat
	Wildlife habitat
	Migratory & spawning habitat

Similar to LA Inner Harbor in many respects, LB Inner Harbor is dissimilar to the other Port in the higher number of privately-owned waterfront parcels which the Port has recently been in the process of the buying up and converting to Port-related uses, generally container terminals. Also, basins and slips in LB Inner Harbor are somewhat more separated from each other than in LA Inner Harbor which may possibly prevent contamination from spreading easily.

The outer part of both harbors (the greater San Pedro Bay) has been less disrupted and supports a great diversity of marine life. It is also open to the ocean at its eastern end and receives much greater flushing than the inner harbors.

Water Quality Issues and Problems

A POTW discharges secondary-treated effluent to the outer LA/LB Harbor and is under a time schedule order to remove the discharge. The discharger's plan consists of achieving full reclamation (mostly for industrial reuse purposes) by 2020 which would eliminate the discharge completely. They plan on achieving about 80% reclamation by 2005. Two generating stations discharge to the inner harbor areas. Many smaller, non-process waste discharges also occur into the harbors and Dominguez Channel drains a highly industrialized area of the city resulting in very poor water quality.

Permitted discharges:

- Nine major NPDES discharges: one POTW, two generating stations, and five refineries; 48 minor discharges; 60 discharges covered by general permits
- 399 dischargers covered under an industrial storm water permit
- 134 dischargers covered under the construction storm water permit

Types of permitted wastes discharged into the Dominguez Channel WMA:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) contaminated groundwater DCNWTRS	1 5	Major General
Nonhazardous (designated) contact cooling water DCONTAC	2	Minor
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	6 15	Minor General
Nonhazardous (designated) noncontact cooling water DNONCON	2 2 1	Major Minor General
Nonhazardous (designated) process waste (produced as part of industrial/manufacturing process) DPROCES	1	Minor
Nonhazardous (designated) stormwater runoff DSTORMS	2 29	Major Minor
Hazardous noncontact cooling water HNONCON	1	Major
Hazardous contaminated groundwater HCNWTRS	3 12	Minor General
Hazardous stormwater runoff HSTORMS	2	Major
Nonhazardous (designated) washwater waste (photo reuse washwater, vegetable washwater) DWSHWTR	1	Minor
Nonhazardous (designated) domestic sewage DDOMEST	1	Major
Nonhazardous (designated) filter backwash brine waters DFILBRI	2 1	Minor General
Nonhazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage NMISCEL	12	General
Nonhazardous filter backwash brine waters NFILBRI	1	General
Nonhazardous contaminated groundwater NCNWTRS	2	General
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage IMISCEL	11	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water

Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

About one-half of the 117 NPDES discharges to Dominguez Channel; the rest go to the LA/LB Harbor complex.

Of the 399 dischargers enrolled under the general industrial storm water permit in the watershed, the largest numbers are located in the cities of Gardena, Wilmington, Torrance, and Carson, along Dominguez Channel. Trucking & warehousing, auto wrecking, and metal plating are a large component of these businesses.

There are 134 sites enrolled under the construction storm water permit. The majority are along Dominguez Channel and are a mix of residential. Industrial, and commercial sites; about one-half of the sites are five acres or larger or larger in size. The larger parcels of up to 500 acres in size are mostly located in the ports.

Two areas within Los Angeles Harbor are considered to be toxic hot spots under the BPTCP: Dominguez Channel/Consolidated Slip, based on sediment concentrations of DDT, PCB, cadmium, copper, lead, mercury, zinc, dieldrin, chlordane (all exceed sediment quality guidelines), sediment toxicity, and degraded benthic infaunal community; and Cabrillo Pier area, based on sediment concentrations of DDT, PCB and copper, sediment toxicity and issuance of a human health (fishing) advisory for DDT and PCB in white croaker and exceedances of National Academy of Science guidelines for DDT in fish and shellfish. Several locations have been listed as sites of concern under the BPTCP: Inner Fish Harbor, due to sediment concentrations of DDT, PCB, copper, mercury and zinc and sediment toxicity (not recurrent); Kaiser International, due to sediment concentrations of DDT, PCB, PAH, copper and endosulfan; Hugo Neu-Proler, due to PCB sediment concentrations; Southwest Slip, due to sediment concentrations of DDT, PCB, PAH, mercury, and chromium, and sediment toxicity (not recurrent); Cerritos Channel, due to sediment concentrations of DDT, PCB, metal, chlordane, TBT, sediment toxicity and accumulation in mussel tissue; Long Beach Outer Harbor, due to sediment concentrations of DDT and chlordane and sediment toxicity (not recurrent); and West Basin, due to sediment concentrations of DDT and PCB, sediment toxicity (not recurrent) and accumulation in clam tissue. There is need for further monitoring in all of these areas to clarify their status. Potential sources of these materials are considered to be historical deposition, discharges from the nearby POTW (especially for metals), spills from ships and industrial facilities, as well as stormwater runoff. Many areas of the harbors have experienced soil and/or groundwater contamination, which may result in possible transport of pollutants to the harbors' surface waters. Dredging and disposal of contaminated sediments and source control of pollutants in the harbors will be a major focal point for the Contaminated Sediment Task Force described further in the Region-wide Section of this document.

Potential sources of pollution:

- Historical deposits of DDT and PCBs in sediment
- Discharges from POTW & refineries
- Spills from ships and industrial facilities
- Leaching of contaminated groundwater
- Stormwater runoff

Los Angeles Inner Harbor

Although the area is dramatically cleaner now than twenty-five years ago, parts of LA Inner Harbor are still suffering the effects of historic deposits of pollutants in the sediment and current point and nonpoint source discharges. Fish caught in the East Basin have exhibited histopathological abnormalities (liver lesions). The abnormalities are indicative of aromatic and chlorinated hydrocarbon contamination. There is also significant degradation in the biological community of a part of Inner Harbor with high levels of PCB and DDT; and toxicity of the surface water microlayer of one part of the harbor to a test fish species (larval kelp bass). Additionally, Cal-EPA's Office of Environmental Health Hazard Assessment now advises against consumption of white croaker in the harbor and recommends no more than one meal every two weeks of black croaker, queenfish, and surfperches if caught in the harbor. On the other hand, the benthic community in many other areas of the inner harbor are healthy and sediments, though high in many pollutants, do not cause a great deal of toxicity in controlled lab tests.

LA Inner Harbor is on the 2002 303(d) list due to DDT, metals, PAHs, chlordane, TBT, and PCBs. Some of the contamination in sediment is historic with resuspension potential. Dominguez Channel was the recipient of runoff from the Montrose Chemical Facility which manufactured DDT for several decades until the early 1970s. There are also mostly nonpoint source inputs from several problem sites, spills, and storm drain runoff. The problems tend to be exacerbated by the poor circulation and flushing. The Port is in the process of filling in a large part of Outer Harbor and deepening some channels as part of their "2020 Plan". Pier 400, a 590-acre site of new land created by diking and filling harbor waters, was completed in April 2000. As a result, the potential exists for greater stagnation and more problems from deposition of new contaminants.

Data from the State Mussel Watch (SMW) Program have documented high levels of metals, PCBs, TBT, and PAHs in mussel tissue at several locations in LA Inner Harbor. The Bay Protection and Toxic Cleanup Program (BPTCP) has found a number of inner harbor areas with elevated pollutant levels but a smaller number of those have exhibited sediment toxicity.

Sediment data collected by Regional Board staff, the Port of LA, and various other researchers, have revealed several areas of heavy contamination with metals, PCBs, and DDT, and occasionally PAHs. Regional Board data show that the level of contamination within particular regions of the inner harbor vary considerably from site to site. Additionally, it is difficult to separate the effects of historic contamination from current inputs. Bight'98 included samples within harbors, including a number of stations in LA/LB Harbor; toxicity, sediment chemistry, and benthic data reports should be available early in 2002.

Dominguez Channel

The results of sampling in 2002 found that for several chemicals, the maximum concentrations observed in Consolidated Slip sediments exceeded the NOAA ERM values. Average concentrations (based on all data collected over the past 10 years) were close to or above the ERM for copper, lead, mercury, DDT, PCB and chlordane (this table was not in the draft report). Contour maps of the contaminants show different patterns according to the chemical (lead and DDT have different distributions in Consolidated Slip) and with depth (the surficial sediments show different distributions than medium depth and deep cores).

Sediment sampling for DDT was conducted in the Channel by a consultant for Montrose during 1990. EPA, in a letter to Montrose, cited this data and provided a comparison of those values with NOAA's "identified concentrations of DDT in sediment associated with adverse impacts. A sediment level of 3 ppb was associated with adverse impacts in 10% (ER-L) of the data reviewed by NOAA and a level of 350 ppb total DDT was associated with adverse impacts in 50% (ER-M) of the data reviewed by NOAA" (EPA letter to Montrose Chemical Corporation, November 27, 1991). The consultant found DDT levels of 300 - 13,000 ppb in the Channel. EPA stated that adverse impacts in the biological community of Dominguez Channel and Consolidated Slip would be expected.

Of major concern in the mid-1980s was discharge of zinc chromate as an additive in cooling water/boiler blowdown. There may have been some justification for that concern. Sediment sampling conducted by Regional Board staff in 1988 revealed zinc levels as high as 447 ppm, chromium as high as 67 ppm, and lead as high as 231 ppm

A Regional Board study conducted in 1975 found that the aquatic biota of the Channel were largely marine in origin and were a continuation of LA Inner Harbor biota. The number and abundance of aquatic species declined with distance inland from the harbor. A fairly abrupt decline in benthic species between Alameda and Wilmington Streets was attributed to the effects of pollution. *Capitella capitata* was one of the most abundant benthic species in the area and is generally associated with polluted areas. An absence of benthic fish species adjacent to one oil refinery was considered to be indicative of oxygen-poor bottom water. There was a degraded benthic community at several stations in Consolidated Slip during BPTCP sampling.

Long Beach Inner Harbor

While historic contamination is a definite problem in the older parts of the harbor (including the naval base), Pier J has only recently been constructed, utilizing some highly contaminated dredge material. Some other likely problem sites include: Cerritos Channel with its inputs at times from Consolidated Slip, a creosote manufacturing site, several oil terminals, a defunct ship repair yard (and several active ones), and the naval base, which is closed, while the attached shipyard remains open.

Contamination in the LB Inner Harbor is known to be sporadic. Little information is available on contamination in Southeast Basin except for TBT water concentrations of up to 380 PPT found in a 1988 statewide study of harbors and low levels of PCBs found in mussel tissue in 1986. The most recent SMW data for the Inner Harbor show some areas of elevated DDT, most notably at those stations located in or near Cerritos Channel.

Moderate PCB levels were found in mussel tissue in front of the creosote facility located in Channel 2 and somewhat higher levels were found in Cerritos Channel which is likely related to its proximity to Consolidated Slip and other LA Harbor point and nonpoint sources. Long Beach Inner Harbor is on the 2002 303(d) list for DDT, PAHs, and PCBs, while San Pedro Bay is listed for DDT, PAHs, PCBs, and some metals.

The table below gives examples of typical data ranges which led to the listings.

IMPAIRMENTS:

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
Benthic comm. effects	Basin Plan narrative objective		Dominguez Channel Estuary (to Vermont) Los Angeles Harbor: Consolidated Slip Long Beach Harbor (part. Main Ch., SE Basin, West Basin, Pier J, and breakwater)
ChemA* (tissue)	National Academy of Science Guideline (tissue): 100 ng/g		Dominguez Channel Estuary (to Vermont) Dominguez Channel (above Vermont) Machado Lake (Harbor Lake)
Chlordane (sediment and/or tissue	Sediment quality guidelines: 4 – 6 ng/g	ND - 246 ng/g (sediment)	Dominguez Channel Estuary (to Vermont) Dominguez Channel (above Vermont)
	State Board numeric objective (tissue): Max. Tissue Residue Level 8.3 ng/g	5.0 - 277 ng/g (tissue)	Los Angeles Harbor: Consolidated Slip Machado Lake (Harbor Lake)
DDT (sediment and/or tissue)	Sediment quality guidelines: 45 – 51 ng/g	63 - 1317 ng/g (sediment)	Dominguez Channel Estuary (to Vermont)
	State Board numeric objective (tissue): Max. Tissue Residue Level 32.0 ng/g	24 - 204 ng/g (tissue)	Dominguez Channel (above Vermont) Los Angeles Harbor: Consolidated Slip Los Angeles Harbor: Fish Harbor Long Beach Harbor (part. Main Ch., SE Basin, West Basin, Pier J, and breakwater) Los Angeles Harbor: Inner Breakwater Los Angeles Harbor: Main Channel Cabrillo Beach (Inner) San Pedro Bay nearshore and offshore zone Los Angeles Harbor: Southwest Slip Machado Lake (Harbor Park Lake)
PCBs (sediment and/or tissue)	Sediment quality guidelines: 180 – 188 ng/g	91 - 2118 ng/g (sediment)	Dominguez Channel Estuary (to Vermont)
	State Board numeric objective (tissue): Max. Tissue Residue Level 5.3 ng/g	ND - 444 ng/g (tissue)	Dominguez Channel (above Vermont) Los Angeles Harbor: Consolidated Slip Los Angeles Harbor: Fish Harbor Los Angeles Harbor: Main Channel Los Angeles Harbor: Southwest Slip San Pedro Bay nearshore and offshore zone Cabrillo Beach (Inner) Long Beach Harbor (part. Main Ch., SE Basin, West Basin, Pier J, and breakwater) Machado Lake (Harbor Park Lake)
Aldrin (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level 0.33 ng/g	5.3 ng/g (maximum)	Dominguez Channel Estuary (to Vermont) Dominguez Channel (above Vermont)
Dieldrin (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level 0.7 ng/g	ND – 7.2 ng/g (tissue)	Dominguez Channel Estuary (to Vermont) Dominguez Channel (above Vermont) Los Angeles Harbor: Consolidated Slip Machado Lake (Harbor Park Lake)
sediment toxicity	Basin Plan narrative objective	0 – 100% survival	San Pedro Bay nearshore and offshore zone Los Angeles Harbor: Southwest Slip Los Angeles Harbor: Consolidated Slip Los Angeles Harbor: Main Channel Long Beach Harbor (part. Main Ch., SE Basin, West Basin, Pier J, and breakwater)
PAHs (sediment and/or tissue)	Basin Plan narrative objective	2,000 - 15,000 ng/g (sediment) 2,700 ng/g (tissue) (maximum)	Dominguez Channel (above Vermont) Dominguez Channel Estuary (to Vermont) Los Angeles Harbor: Consolidated Slip Los Angeles Harbor: Main Channel Los Angeles Harbor: Inner breakwater Los Angeles Harbor: Fish Harbor Long Beach Harbor (part. Main Ch., SE Basin, West Basin, Pier J, and breakwater) San Pedro Bay nearshore and offshore zone
Chromium (sediment)	Sediment quality guidelines: 160 – 370 ug/g	47 - 552 ug/g (sediment)	San Pedro Bay nearshore and offshore zone Dominguez Channel (above Vermont) Dominguez Channel Estuary (to Vermont) Los Angeles Harbor: Consolidated Slip

* ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, HCH (including lindane), endosulfan, and toxaphene

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
Zinc (sediment and/or tissue)	Sediment quality guidelines: 271 – 410 ug/g	140 - 1010 ug/g (sediment)	Los Angeles Harbor: Consolidated Slip
	Basin Plan narrative objective	110 - 510 ug/g (tissue)	Dominguez Channel (above Vermont) Dominguez Channel Estuary (to Vermont) Los Angeles Harbor: Main Channel San Pedro Bay nearshore and offshore zone
Cadmium (sediment)	Sediment quality guidelines: 4 – 9 ug/g	1 – 15 ug/g	Los Angeles Harbor: Consolidated Slip
Lead (sediment and/or tissue)	Sediment quality guidelines: 112 – 218 ug/g	40 - 1590 ug/g (sediment)	Los Angeles Harbor: Consolidated Slip
	Basin Plan narrative objective	4 ug/g (tissue) (average)	Torrance Carson Channel Dominguez Channel Estuary (to Vermont) Dominguez Channel (above Vermont) Wilmington Drain
Copper (sediment, tissue and/or water)	Sediment quality guidelines: 108 – 270 ug/g	58 - 1740 ug/g (sediment)	Los Angeles Harbor (Main Channel)
	Basin Plan narrative objective	11 ug/g (tissue) (maximum)	Wilmington Drain Dominguez Channel (above Vermont) Torrance Carson Channel San Pedro Bay nearshore and offshore zone
Nickel (sediment)	Sediment quality guidelines: 43 – 52 ug/g	23 – 54 ug/g	Los Angeles Harbor: Consolidated Slip
Mercury (sediment)	Sediment quality guidelines: 0.7 ug/g	0.1 – 3 ug/g	Los Angeles Harbor: Consolidated Slip
algae, eutroph.	Basin Plan narrative objective		Machado Lake (Harbor Park Lake)
Odors	Basin Plan narrative objective		Machado Lake (Harbor Park Lake)
ammonia	Basin Plan narrative objective		Machado Lake (Harbor Park Lake) Wilmington Drain
	Basin Plan numeric objective: varies depending on pH and temperature but the general range is 0.53 - 2.7 mg/l of total ammonia (at average pH and temp.) in waters designated as WARM to protect against chronic toxicity and 2.3 - 28.0 mg/l to protect against acute toxicity	ND - 18.0 mg/l	Dominguez Channel (above Vermont) Dominguez Channel Estuary (to Vermont)
coliform	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml Beaches: total coliform not to exceed 1,000 MPN/100ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100ml at any time	33 - 160,000 MPN/100ml	Dominguez Channel (above Vermont) Dominguez Channel Estuary (to Vermont) Torrance Carson Channel Wilmington Drain
beach closures	Basin Plan narrative objective	2 - 11 days/year closed	Los Angeles Harbor (Main Channel) Cabrillo Beach (Inner)
Trash	Basin Plan narrative objective		Machado Lake (Harbor Park Lake)

* Chem A refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, HCH (including lindane), endosulfan, and toxaphene

CURRENTLY SCHEDULED TMDLS:

- Coliform (LA Harbor)-FY04/05

Stakeholder Group

The Dominguez Channel Watershed Advisory Council was formed in February 2001and meets on a monthly basis to conduct a variety of tasks including development of a Watershed Management Master Plan aimed at protecting and improving the environment and beneficial uses of the watershed. Proposition 13 funding ($200,000) was approved by the State Water Resources Control Board for the LA

County Department of Public Works to work on a watershed plan. Many members of the group are also participating in Regional Board TMDL work in the watershed. The watershed plan has recently been finalized and a list of potential implementation projects/programs is included in the Plan. The group's website is at http://ladpw.org/wmd/watershed/dc/.

Signficant Past Activities

This watershed was the focus of SWAMP monitoring for FY02/03. The WMA was been divided into six subareas based on characteristics of the area in order to simplify sampling design: (1) headwater streams, (2) the inner and outer harbors of LA and LB (integrated with Bight '03 monitoring), (3) Madrona Marsh, (4) Machado Lake, (5) the Dominguez Channel estuary, and (6) the upper channelized Dominguez Channel above normal tidal influence. The sampling design was partially a reflection of the need to supplement outdated information for some water bodies. For example, information on Machado Lake water quality was outdated and the lake is posted for fishing, therefore, studies included fish tissue analysis in conjunction with water column chemistry and toxicity, sediment chemistry and toxicity, and pathogens. A different sampling strategy was undertaken for the LA/LB harbor complex. Sampling there included water column toxicity and chemistry, metals chemistry, and PAH analysis. The ability to break down this watershed into subareas based on characteristics of the area identified allowed staff to devise sampling plans and monitor for constituents in relation to each area. The focus was on a randomized probabilistic sample design as modeled after the USEPA's EMAP program, especially for the harbor area. The triad approach (toxicity, chemistry, and benthic community) was utilized where possible.

Current Activities

The following is a summary of current regional board activities in the Dominguez Channel Watershed which are expected to continue as part of the Watershed Management Initiative on a watershed basis.

CORE REGULATORY

Continuing core regulatory activities include necessary renewal/revision of NPDES permits. There are nine major dischargers, 48 significant or minor dischargers under individual permits, as well as 60 dischargers currently covered under general permits (additional information on permits may be found in the Appendix). Compliance inspections, review of monitoring reports, response to complaints, and enforcement actions relative to the watershed's NPDES permits will continue. A watershed-wide regional monitoring program will be created in anticipation of the next cycle. Due to limited resources, only the basic regulatory activities are performed: review of dischargers' monitoring reports, minimum necessary inspections and sampling, issuance/ renewal of permits, levels 1 and 2 enforcement actions (noncompliance and violation notification), case handling, and answering inquiries from the public.

The Dominguez Channel Watershed Management Area falls within Los Angeles County which has been covered by a municipal storm water permit since 1990. The third five-year permit was adopted on December 13, 2001. This permit covers Los Angeles County and all the incorporated cities, except the City of Long Beach, which was issued a separate municipal storm water permit in 1999. The Los Angeles County Flood Control District is the Principal Permittee. Under the requirements of the permit, the Permittees will implement the Storm Water Quality Management Plan which includes the following components: (a) Program Management; (b) Public Information and Participation Program; (c)

Industrial/Commercial Facilities Program; (d) Development Planning Program; (e) Programs for Construction Sites; (f) Public Agency Activities; and (e) Illicit Connection/Illicit Discharge Elimination Program. These programs collectively are expected to reduce pollutants in storm water discharges to the maximum extent practicable. In addition, the County will conduct a storm water monitoring program to estimate mass emissions and toxicity of pollutants in its waters, evaluate causes of toxicity, and several other components to characterize storm water discharges and measure the effectiveness of the Storm Water Quality Management Program. The permit can be downloaded from the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/la_ms4_final.html.

An important requirement of both the Los Angeles County and the City of Long Beach municipal storm water permits is implementation of the Standard Urban Storm Water Mitigation Plans (SUSMPs) and numerical design standards for Best Management Practices (BMPs), which municipalities began implementing in February 2001. The final SUSMP was issued on March 8, 2000, and amended in the permit, adopted on December 13, 2001. The SUSMP is designed to ensure that storm water pollution is addressed in one of the most effective ways possible, i.e., by incorporating BMPs in the design phase of new development and redevelopment. It provides for numerical design standards to ensure that storm water runoff is managed for water quality and quantity concerns. The purpose of the SUSMP requirements is to minimize, to the maximum extent practicable, the discharge of pollutants of concern from new and redevelopment. The requirements are very similar to the Ventura County SQUIMP.

The numerical design standard is that post-construction treatment BMPs be designed to mitigate (infiltrate or treat) storm water runoff from the first ¾ inch of rainfall, prior to its discharge to a storm water conveyance system.

MONITORING AND ASSESSMENT

Consolidated Slip Restoration Project: Consolidated Slip is located in the East Basin area of the Port of Los Angeles. Much of the Dominguez Channel Watershed, which is comprised of approximately 110 square miles of land in the southern portion of Los Angeles County, empties into the northeast side of Consolidated Slip. Approximately 96% of the watershed area is developed and the overall land uses are transportation, commercial, industrial and residential.

Tributaries to Dominguez Channel include several storm drains and minor channels. From the 1910s until today, millions of gallons per day of industrial wastewater have been discharged into the Dominguez Channel, significantly contributing to the contaminant loading within Consolidated Slip. In addition, stormwater runoff from the Montrose Chemical Corporation's pesticide manufacturing facility in Torrance, which operated from 1947 to 1982, probably contributed to DDT contamination of the watershed and Consolidated Slip.

Numerous sediment characterization studies have identified elevated levels of heavy metals, organochlorine pesticides, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) in sediment and resident organisms from Consolidated Slip. Consequently, Consolidated Slip currently is listed as a Clean Water Act Section 303(d) impaired water body and was designated by the Board as a toxic hot spot under the Bay Protection and Toxic Cleanup Program. Based on available information, over 1 million cubic yards of sediment may be impacted and require remedial actions to address water quality problems and restore beneficial uses.

The Los Angeles Regional Board, in cooperation with the United States Environmental Protection Agency, the Port of Los Angeles and other interested parties, initiated the Consolidated Slip Restoration Project. The goals of this project are to describe the extent of sediment contamination in Consolidated Slip, identify the appropriate project stakeholders, evaluate remediation and restoration options, select an approach to solve the water quality problems and restore beneficial uses, develop a cost estimate for the proposed solution, identify funding sources to implement the project, and prepare and execute a restoration plan.

The Port of Los Angeles prepared a draft conceptual plan on behalf of the Consolidated Slip Restoration Project. This plan described the extent of sediment contamination in Consolidated Slip and the site's history, discussed potential cleanup alternatives and possible funding sources, and identified data gaps. Although considerable sediment quality data had been collected for the project area, it was not adequate for directing the actual clean up of the site. Additional sediment sampling was required to characterize the areal extent and vertical depth of contamination in Consolidated Slip. The potential for recontamination of Consolidated Slip sediments from upstream areas of the watershed also needed to be evaluated.

The United State Environmental Protection Agency (EPA) conducted a monitoring study in 2002 to assess current sediment distributions and concentrations of DDT in sediments within the surface water drainage pathway leading from the Montrose Chemical Corporation's Torrance manufacturing facility site. EPA agreed to work with the Los Angeles Regional Board to expand the scope of this sampling program to include additional sediment chemistry analyses (e.g., trace metals and other trace organics), deeper cores and additional monitoring stations. This extra monitoring effort has been paid for by several of the stakeholders of the Consolidated Slip Restoration Project.

Although cleanup targets have not been formally established for each contaminant of concern, it appears that approximately 1.3 million cubic yards of contaminated sediments would require remediation within the Consolidated Slip area. In addition, approximately 700,000 cubic yards of contaminated sediments are present in portions of Dominguez Channel upstream from Consolidated Slip; this material may require removal to prevent recontamination of Consolidated Slip following remediation efforts in that area.

Several remediation alternatives to deal with the sediment contamination problem were evaluated at a conceptual level in terms of technical and economic feasibility. The Restoration Project's Steering Committee recommended more detailed analysis of several potential remediation alternatives, including partial capping of contaminated sediments, on-site fill of a portion of the slip, removal and off-site disposal of contaminated sediments, removal and disposal of contaminated sediments to a Class I landfill (transport to Utah by rail), and treatment and possible beneficial re-use of contaminated sediments. A consultant is preparing this more detailed alternatives evaluation report, which should be in late 2004.

The actual cost of the proposed cleanup of Consolidated Slip will depend on the volume of contaminated sediments to be processed and the remediation alternative selected. The project could cost as much as $75 million (based on a potential maximum of 1 million cubic yards of sediment at an estimated average handling and disposal cost of $75 per cubic yard). The Los Angeles Regional Board currently has almost $1 million from previous settlement actions available for this cleanup project, which is expected to be a multi-year endeavor. However, a large amount of additional funding will be needed to implement this

project. Potential funding sources include cost recovery from responsible parties, the State's Cleanup and Abatement Account, the U.S. Environmental Protection Agency, or assistance from other interested parties.

NONPOINT SOURCE PROGRAM

Staff will pursue starting a general stakeholder group in the watershed to address nonpoint source issues. Staff have performed inspections of commercial fishing operations in the Los Angeles Harbor area and educated personnel regarding negative impacts of discharges to the harbor. Since these inspections, staff have initiated some enforcement actions.

BASIN PLANNING

Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

Several high priority issues were identified in the 2001 Triennial Review which affect this watershed management area and will require Basin Planning resources. As in all watersheds, adopting TMDLs as Basin Plan amendments is required under the Consent Decree with an estimated resource need of 0.5 PY/TMDL. This is considered a currently funded activity. Another task identified by the 2001 Triennial Review which can be accomplished at current funding levels involves evaluating specific proposals for changes to beneficial uses. The top one to three beneficial use revisions would then be addressed over the next three years at 0.1 PY/addition. There are a number of beneficial uses that have been suggested for inclusion with those for Machado Lake including warmwater habitat, wildlife habitat, contact recreation, and noncontact recreation. A suggested addition to the Dominguez Channel estuary beneficial uses list is shellfish harvesting.

Comments on watershed issues in CEQA documents for the highest priority projects will continue to be prepared; this is currently an unfunded program.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

Continuing core regulatory activities include compliance inspections, review of monitoring reports, response to complaints, and enforcement actions as needed relative to the watersheds NPDES permits. A watershed-wide regional monitoring program will be created in anticipation of the next cycle.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

We will maintain involvement with stakeholder activities and pursue funding options, especially those involving implementation of nonpoint source measures (coordinate grant activities) as well as other outreach activities such as speeches, meetings, and participation in environmental events. As resources

permit, we will also work with stakeholders to implement provisions of the Coastal Zone Act Reauthorization Amendments.

Potential Mid- to Long-term Activities

As may be the case in other industrial areas with extensive sediment contamination, development of regional sediment quality guidelines would be very valuable. The CSTF has developed an electronic database of relevant local sediment monitoring data that could be used for this purpose.

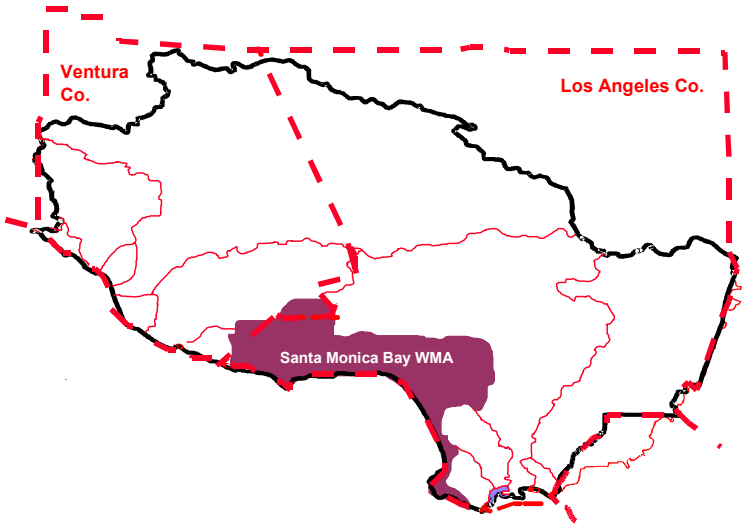
Additional long-term activities include:

- Development of a watershed-wide monitoring program
- Consideration and implementation of TMDL-related issues
- Further evaluate beneficial uses throughout the watershed
- Restoration of habitat following improvements in water quality
- Implementation of biological monitoring
- Development of sediment quality objectives (unfunded 2001 Triennial Review high priority)
- Explore options for, and implement, sediment cleanup/removal

2.10 SANTA MONICA BAY WMA

This watershed will be targeted in FY08/09.

Overview of WMA



The Santa Monica Bay Watershed Management Area (WMA), which encompasses an area of 414 square miles, is quite diverse. Its borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. South of Ballona Creek the natural drainage area is a narrow strip of wetlands between Playa del Rey and Palos Verdes. The WMA includes several watersheds, the two largest being Malibu Creek to the north and Ballona Creek to the south. The Malibu Creek area contains mostly undeveloped mountain areas, large acreage residential properties and many natural stream reaches while Ballona Creek is predominantly channelized, and highly developed with both residential and commercial properties.

As a nationally significant water body, Santa Monica Bay was included in the National Estuary Program in 1989. It has been extensively studied by the Santa Monica Bay Restoration Project (SMBRP) and a watershed plan was developed in 1995. The Santa Monica Bay Watershed Council was formed in 1994 to oversee implementation of the Plan. The Restoration Project staff will be coordinating with Regional Board staff to carry out the Board's watershed approach in the Santa Monica Bay Watershed.

Water Quality Problems and Issues

Though relatively small in its size compared with watersheds in other parts of the country, the Santa Monica Bay WMA embraces a high diversity in geological and hydrological characteristics, habitat features, and human activities. Almost every beneficial use defined in the Basin Plan is identified in water bodies somewhere in the WMA. Yet many of these beneficial uses have been impaired for years. While some of the impaired areas are showing signs of recovery, beneficial uses that are in relatively good condition still face the threat of degradation.

Existing and potential beneficial use impairment problems in the watershed fall into two major categories: human health risk, and natural habitat (wildlife) degradation. The former are issues primarily associated with recreational uses of the Santa Monica Bay. The latter are issues associated with terrestrial, aquatic, and marine environments. Pollutant loadings that originate from human activities are common causes of both human health risks and habitat degradation.

Beneficial Uses in the WMA:

All of the beneficial uses defined in the Basin Plan for the Region occur somewhere in this Watershed Management Area except for BIOL (preservation of biological habitats)

Permitted discharges:

- 185 NPDES discharges including: seven major NPDES permit discharges, three POTWs (two direct ocean discharges), one refinery, and three generating stations; 21 are minor discharges
- 158 dischargers covered under general permits
- 87 dischargers covered by an industrial storm water permit
- 220 dischargers covered by a construction storm water permit

Of the major NPDES dischargers in the Santa Monica Bay WMA, the three POTWs (particularly the two direct ocean discharges) are the largest point sources of pollutants to Santa Monica Bay. Pollutants from the minor discharges have been estimated to contribute less than two percent of the total pollutants being discharged to the Bay.

Types of permitted wastes discharged into the Santa Monica Bay WMA:

Nature of Waste *Prior* to Treatment or Disposal	# of Permits	Types of Permits
Nonhazardous (designated) contaminated groundwater DCNWTRS	3 16	Minor General
Nonhazardous (designated) contact cooling water DCONTAC	1	Major
Nonhazardous (designated) domestic sewage & industrial waste DDOMIND	3	Major
Nonhazardous (designated) domestic sewage DDOMEST	2	Minor
Nonhazardous (designated) filter backwash brine waters DFILBRI	1	Minor
Hazardous stormwater runoff HSTORMS	1	Major
Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DMISCEL	11 96	Minor General
Nonhazardous (designated) process waste (produced as part of industrial/manufacturing process) DPROCES	2	Major
Nonhazardous (designated) stormwater runoff DSTORMS	1	Minor
Hazardous contaminated groundwater HCNWTRS	19	General
Nonhazardous noncontact cooling water NNONCON	1	General
Nonhazardous (designated) noncontact cooling water DNONCON	3 1	Minor General
Nonhazardous contaminated groundwater NCNWTRS	4	General
Nonhazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage NMISCEL	5	General
Nonhazardous contaminated soil NCNSOIL	1	General
Inert wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage) IMISCEL	5	General

Hazardous wastes are those influent or solid wastes that contain toxic, corrosive, ignitable, or reactive substances (prior to treatment or disposal) managed according to applicable Department of Health Services standards
Designated wastes are those influent or solid wastes that contain **nonhazardous** wastes (prior to treatment or disposal) that pose a significant threat to water quality because of their high concentrations
Nonhazardous wastes are those influent or solid wastes that contain putrescible and nonputrescible solid, semisolid, and liquid wastes (prior to treatment or disposal) and have little adverse impact on water
Inert wastes are those influent or solid wastes that do not contain soluble pollutants or organic wastes (prior to treatment or disposal) and have little adverse impact on water quality

Major discharges are POTWs with a yearly average flow of over 0.5 MGD or an industrial source with a yearly average flow of over 0.1 MGD and those with lesser flows but with acute or potential adverse environmental impacts.

Minor discharges are all other discharges that are not categorized as a Major. Minor discharges may be covered by a general permit, which are issued administratively, for those that meet the conditions specified by the particular general permit.

The majority of the 185 NPDES discharges to the Santa Monica Bay WMA go to Ballona Creek.

Of the 87 dischargers enrolled under the general industrial storm water permit in the watershed, the largest numbers are located in the cities of Los Angeles and Santa Monica. Maintenance yards, recycling facilities, and electronics are a large component of these businesses.

There are a total of 220 construction sites enrolled under the construction storm water permit. Many of these sites are in the Malibu Creek and Ballona Creek Watersheds. The sites are fairly evenly divided between commercial and residential. About one-half of the sites are five acres or larger; two sites in the Ballona Creek drainage are over 1,000 acres in size.

A considerable number of monitoring programs have been implemented in the Santa Monica Bay WMA, particularly over the last twenty years. Sampling efforts tend to center around assessing urban runoff effects in general along the coastline and reservoirs of PCBs and DDT contaminated sediment in the area of the Palos Verdes Shelf. Four statewide monitoring programs, State Mussel Watch, Bay Protection and Toxic Cleanup, Coastal Fish Contamination Program and Toxic Substances Monitoring, had focused on biological measurements.

The data from these programs indicate that in general the open coastline is much cleaner than the Bay's enclosed waters, except with regards to DDT and PCBs on the Palos Verdes Shelf. Pollutants of particular concern are chlordane, DDT, copper, and zinc. The BPTCP has listed the Santa Monica Bay - Palos Verdes Shelf area as a toxic hot spot for DDT and PCBs human health advisories (fishing) and NAS exceedances of DDT levels in fish. Marina Del Rey is listed as a toxic hot spot due to sediment concentrations of DDT, PCB, copper, mercury, nickel, lead, zinc and chlordane, and sediment toxicity; Ballona Creek Entrance Channel is listed due to sediment concentrations of DDT, zinc, lead, chlordane, dieldrin, and chlorpyrifos, and sediment toxicity. The BPTCP listed King Harbor as a site of concern, due to sediment concentrations of DDT and PCB and sediment toxicity (not recurrent).

Urbanization has had a significant impact on the riparian and wetland resources of the watershed, primarily through filling, alteration of flows, and decrease in water quality. It is estimated that 95% of the historic wetlands of the Santa Monica Bay WMA have been destroyed, with the remaining wetlands significantly degraded.

Although groundwater accounts for only a limited portion of the Santa Monica Bay WMA's supply of fresh water, the general quality of groundwater in the watershed has degraded from background levels.

Greater Santa Monica Bay

Santa Monica Bay is heavily used for fishing, swimming, surfing, diving etc., activities classified as water contact recreation (REC-1). However, the ability for people to enjoy these activities has been lost to a certain degree because of the real or perceived risk to human health. The primary, and also the best documented, problems are acute health risk associated with swimming in runoff-contaminated surfzone

waters, and chronic (cancer) risk associated with consumption of certain sport fish species in areas impacted by DDT and PCB contamination.

The general public has also been concerned about potential health risks associated with the consumption of contaminated seafood from Santa Monica Bay. This is the primary pathway through which humans are exposed to toxic chemicals found in the marine environment. Recent studies, however, have shown that health risks are limited to consumption of certain seafood species found at certain locations.

One of the most evident impacts in marine habitats is sediment contamination and damage to marine life that the contaminants cause when they are released from the sediment (through natural fluctuations or through disturbance of the sediment) into the food chain. Organic compounds such as DDT, PCBs, polycyclic aromatic hydrocarbons (PAHs), chlordane, and tributyltin (TBT) are found in sediments in concentrations that are harmful to marine organisms at various locations in the Bay. Also found in Bay sediments are heavy metals such as cadmium, copper, chromium, nickel, silver, zinc, and lead. The major historic sources of sediment contamination have been wastewater treatment facilities; thus the accumulations are highest near treatment plant outfalls off of Palos Verdes and Playa del Rey.

Major Issues of Concern in Greater Santa Monica Bay

- Acute health risk associated with swimming in runoff-contaminated surfzone waters
- Chronic risk associated with consumption of certain sport fish species in areas impacted by DDT and PCB contamination
- Reduction of loadings from the two major POTWs in light of projected population increases
- Other impacts from urban runoff/storm water
- Historic deposits of DDT and PCBs in sediment; high levels in fish (Palos Verdes Shelf a Superfund site)
- Loadings of pollutants from other sources: sediment resuspension, atmospheric deposition
- The need to have a better understanding of the Bay's resources

Bioaccumulation of DDT in white croaker, dover sole, and California brown pelicans are well-known examples of the impacts caused by sediment contamination. Prior to the 1980s, high concentrations of DDT were found in muscle tissues of these organisms. DDT in these organisms was implicated in fin erosion and other diseases in fish as well as eggshell thinning and subsequent species decline in the California brown pelican.

Malibu Creek Watershed

The most recent Water Quality Assessment Report finds water quality in some streams within the Malibu Creek Watershed is impaired by nutrients and their effects, coliform and their effects, trash, and, in some instances, metals. While natural sources contribute, nonpoint source pollution from human activities is strongly implicated including ill-placed or malfunctioning septic systems and runoff from horse corrals. Nutrient inputs are also contributed by urban runoff and the POTW which discharges tertiary-treated effluent into the Creek about five miles upstream of Malibu Lagoon.

Major Issues of Concern in Malibu Creek Watershed

- Excessive freshwater, nutrients, and coliform in lagoon; contributions from POTW
- Urban runoff from upper watershed
- Impacts to swimmers/surfers from lagoon water
- Septic tanks in lower watershed
- Appropriate restoration and management of lagoon
- Access to creek and lagoon by endangered fish (steelhead trout and tidewater goby)

A nutrient TMDL for the mainstem of the Creek is being developed by the Regional Board although ecologically-relevant nutrient objectives are lacking. A study recently completed by UCLA provided recommendations which should lead to more effective management of the Lagoon and its resources as the restoration process continues.

Historically, the Lagoon was much larger than its current day size. Although the flow dynamics of the Creek as well as the ocean's influence on the Lagoon in the past can only be extrapolated, it is likely Creek flow was much less than today during the dry season, partially due to increased imported water demands upstream. Marine influence may have dominated, keeping the lagoon entrance open much of the year as occurs in the larger Mugu Lagoon to the north. An open Lagoon would have facilitated migration of the now endangered steelhead trout. And though continual Creek flow was likely less, more of the watershed was available for the trouts' use, at least prior to the construction of Rindge Dam in the 1920's. Most important, during the dry season there would be access to deep shaded pools in many parts of the watershed where the fish could mature until rain created the flows needed to reach the ocean.

Today, the flow regime is quite different and now a major issue of concern. Both increased urban runoff from the more developed upper watershed and discharges from the POTW have increased baseline flows. However, recently the POTW which discharges to Malibu Creek came under a discharge prohibition starting each April 15 through November 15 of each year, except during times of plant upset, storm events, or the existence of minimal streamflow conditions that require flow augmentation in Malibu Creek to sustain endangered species. In the long-run, this discharge prohibition may have many other implications on water quality and quantity in the Creek and Lagoon.

The lagoon size is much reduced from historic times and it currently remains closed much of the year except for during the winter when ocean influences breach the sandbar and Creek flows help maintain the opening. This had led to decreasing salinity or, at times, greatly fluctuating salinity which has disturbed efforts to restore the Lagoon. This also leads to elevated groundwater levels adjacent to the lagoon, assuring failure of septic systems in the area. Additionally, surfing and swimming is popular off the beaches in the immediate area and there is considerable concern over contaminated Lagoon water reaching these people.

Ballona Creek Watershed

The most recent Water Quality Assessment Report indicates impairment in this watershed due to coliform and its effects such as shellfish harvesting advisories; trash; PCBs and pesticides of historical origin such as DDT, chlordane, and dieldrin, as well as their effects such as sediment toxicity; metals such as lead, silver, arsenic, copper, cadmium, and zinc, as well as their effects such as water column toxicity; and tributyltin.

Ballona Creek is completely channelized to the ocean except for the estuarine portion which has a soft bottom. While at one time it drained into a large wetlands complex, it now has no direct connection to the few wetlands remaining in the area, although tide gates exist in the channel which connect to Ballona

Wetlands. However, Ballona Creek may more often affect the nearby wetlands due to wave action moving trash, suspended material and dissolved contaminants from the ocean to the nearby Ballona Wetlands and Marina del Rey Harbor within which complex Ballona Lagoon is located.

Major Issues of Concern in Ballona Creek Watershed and Wetlands

- Trash loading from creek
- Wetlands restoration
- Sediment contamination by heavy metals from creek to Marina del Rey Harbor and offshore)
- Toxicity of both dry weather and storm runoff in creek
- High bacterial indicators at mouth of creek

The U.S. Army Corps of Engineers (USACE) and Los Angeles County Department of Beaches and Harbors have several times conducted dredging operations in order to keep the entrance to Ballona Creek and Marina del Rey Harbor open although this is not a routine procedure. Led by the Los Angeles Basin Contaminated Sediment Task Force (for further information on this Task Force, see the Regionwide Section of this document), the USACE is conducting a study to identify sources of heavy metals loadings within the watershed. The results of the study could provide useful information to develop a TMDL for selected heavy metals.

Both dry weather and storm runoff from the main channel and two major tributaries were found to be toxic to marine organisms. Toxicity was also found during storms in the ocean near the mouth of Ballona Creek. Preliminary investigations showed that the sources of toxicity varied, and were associated with metals on one occasion and with organic chemicals on another occasion. Further efforts are needed to identify the sources of toxicity.

Bacterial indicator levels measured at stations near the mouth of Ballona Creek frequently exceed the level of concern. As a result, warning signs are posted permanently on each side of the Creek. The number of beach closures due to sewage spills rose again in 1998 after a long declining trend over the last ten years. The standards used to determine whether a beach should be closed are now based on AB411 and, since its passage, a greater number of beach closures have been seen statewide.

The BPTCP lists the Ballona Creek Entrance Channel and Marina del Rey back channels as Toxic Hot Spots; however, since they are not high priority sites, the Regional Board have not yet developed preliminary remediation plans or cost estimates.

Other Urban Watersheds

The most recent Water Quality Assessment Report indicates impairment in many of these smaller drainages, which discharge directly to the ocean, due to one or several of the following: coliform, ammonia, lead, copper (and toxicity likely associated with metals), trash, and low dissolved oxygen. Due to the frequency of high bacterial indicator levels, warning signs are posted permanently at many of these locations (i.e., storm drain outlets). It should be noted that there are plans to divert many of these storm drains to the sewer system during dry weather.

IMPAIRMENTS:

The table below gives examples of typical data ranges which led to the 2002 303(d) listings.

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
beach closures	Basin Plan narrative objective	1 - 15 days/year closed	Marina Del Rey Harbor Beach

			Santa Monica Bay beaches
swimming restrictions	Basin Plan narrative objective		Malibu Lagoon
shellfish harvesting adv.	Basin Plan narrative objective		Malibu Lagoon Ballona Creek Estuary
enteric viruses	Basin Plan narrative objective		Malibu Lagoon Pico Kenter Drain Ballona Creek
pathogens	Basin Plan narrative objective		Palos Verdes Shoreline Point Beach

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
coliform	Basin Plan numeric objective: Inland: fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples exceed 400 MPN/100ml Beaches: total coliform not to exceed 1,000 MPN/100ml in more than 20% of samples in 30 days and not more than 10,000 MPN/100ml at any time	Exceedances occurring on up to 53% of sample dates	Marina Del Rey Harbor Beach Marine del Rey Harbor - Back Basins Medea Creek Reach 2 (abv. confl. with Lindero) Medea Creek Reach 1 (lake to confl. with Lindero) Las Virgenes Creek Malibu Lagoon Malibu Creek: lagoon to Malibu Lake Stokes Creek Lindero Creek Reach 1 Lindero Creek Reach 2 (above lake) Palo Comado Santa Monica Bay beaches Santa Monica Canyon Ashland Avenue Drain Sepulveda Canyon Pico Kenter Drain Ballona Creek Estuary Ballona Creek
algae	Basin Plan narrative objective		Malibu Creek: Lagoon to Malibu Lake Las Virgenes Creek Lindero Creek Reach 2 (above lake) Medea Creek Reach 2 (abv. confl. with Lindero) Medea Creek Reach 1 (lake to confl. with Lindero) Lindero Creek Reach 1 Malibou Lake Lake Lindero Westlake Lake Lake Sherwood
eutroph.	Basin Plan narrative objective		Malibu Lagoon Malibou Lake Lake Lindero Westlake Lake Lake Sherwood
unnatural scum/foam	Basin Plan narrative objective		Malibu Creek: lagoon to Malibu Lake Las Virgenes Creek Lindero Creek Reach 2 (above lake) Lindero Creek Reach 1
ammonia	Basin Plan narrative objective		Westlake Lake Lake Sherwood
	Basin Plan numeric objective: varies depending on pH and temperature but the general range is 0.53 - 2.7 mg/l of total ammonia (at average pH and temp.) in waters designated as WARM to protect against chronic toxicity and 2.3-28.0 mg/l to protect against acute toxicity	ND - 5.77 mg/l	Sepulveda Canyon Pico Kenter Drain
odors	Basin Plan narrative objective		Lake Lindero
low DO, organic enrichment	Basin Plan narrative objective		Las Virgenes Creek Malibou Lake
	Basin Plan numeric objective: annual mean greater than 7.0 mg/l no single sample less than 5.0 mg/l	0.1 - 19.3 mg/l (mean of 4.9 ± 4.5)	Westlake Lake Lake Sherwood Ashland Avenue Drain
trash	Basin Plan narrative objective		Ballona Wetland Ballona Creek Medea Creek Reach 2 (abv. confl. with Lindero) Medea Creek Reach 1 (lake to confl. with Lindero) Lake Lindero Lindero Creek Reach 2 (above lake) Lindero Creek Reach 1 Malibu Creek: lagoon to Malibu Lake

			Las Virgenes Creek Pico Kenter Drain
Impairments	**Applicable Objective/Criteria**	**Typical Data Ranges Resulting in Impairment**	**303(d) Listed Waters/Reaches**
Mercury (water and/or tissue)	USEPA water quality criteria: 0.012 ug/l	1.0 ug/l (maximum - water)	Lake Sherwood Triunfo Cyn Creek Reach 1
	State Board numeric objective (tissue): Max. Tissue Residue Level 0.37 ug/g	0.2 – 1.6 ug/g (tissue)	Triunfo Cyn Creek Reach 2
Lead (water and/or sediment)	Sediment quality guidelines: 112 – 218 ug/g	100 - 470 ng/g (sediment)	Marina del Rey Harbor - Back Basins Topanga Cyn Creek
	USEPA water quality criteria: varies based on hardness but typically 3.2 - 25 ug/l	91 - 240 ug/l (water)	Sepulveda Canyon Pico Kenter Drain Ballona Creek Ballona Creek Estuary Santa Monica Canyon Westlake Lake Triunfo Cyn Creek Reach 1 Triunfo Cyn Creek Reach 2
Cadmium (sediment)	Sediment quality guidelines: 4 – 9 ug/g		Ballona Creek
Copper (sediment, tissue and/or water)	Basin Plan narrative objective	100 ng/g (tissue)	Lake Calabasas
	Sediment quality guidelines: 108 – 270 ug/g	420 ug/g (sediment) (maximum)	Marina del Rey Harbor - Back Basins
	USEPA water quality criteria: varies based on hardness but typically 12 - 47 ug/l	117 - 293 ug/l (water)	Ballona Creek Pico Kenter Drain Westlake Lake Malibou Lake
silver (sediment)	Sediment quality guidelines: 2 – 4 ug/g		Ballona Creek
Zinc (sediment)	Sediment quality guidelines: 271 – 410 ug/g	500 ng/g (sediment)	Ballona Creek Estuary Marina del Rey Harbor - Back Basins
Selenium (water)	USEPA water quality criteria: 5.0 ug/l	8 - 38 ug/l	Lake Lindero Medea Creek Reach 2 (abv. confl. with Lindero) Medea Creek Reach 1 (lake to confl. with Lindero) Las Virgenes Creek Lindero Creek Reach 2 (above lake) Lindero Creek Reach 1
toxicity	Basin Plan narrative objective		Ballona Creek Ashland Avenue Drain Pico Kenter Drain
benthic comm. effects	Basin Plan narrative objective	0.34 – 0.66 RBI	Marina del Rey Harbor - Back Basins Malibu Lagoon
fish consumption advisory	Basin Plan narrative objective		Santa Monica Bay Nearshore and Offshore Zone Marina del Rey Harbor - Back Basins
sediment toxicity	Basin Plan narrative objective		Santa Monica Bay Nearshore and Offshore Zone Marina del Rey Harbor - Back Basins Ballona Creek Ballona Creek Estuary
ChemA*	National Academy of Science Guideline (tissue): 100 ng/g		Ballona Creek
PAHs (sediment)	Basin Plan narrative objective	5000 - 6509 ng/g	Ballona Creek Estuary Santa Monica Bay Nearshore and Offshore Zone

Impairments	Applicable Objective/Criteria	Typical Data Ranges Resulting in Impairment	303(d) Listed Waters/Reaches
DDT (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level 32.0 ng/g	52 - 88 ng/g	Marina del Rey Harbor - Back Basins Ballona Creek Estuary Ballona Creek Santa Monica Bay Nearshore and Offshore Zone Santa Monica Bay beaches
pesticides	Basin Plan narrative objective		Palos Verdes Shoreline Point Beach
PCBs (sediment and/or tissue)	Sediment quality guidelines: 180 – 188 ng/g	ND - 391 ng/g (sediment)	Marina del Rey Harbor - Back Basins Ballona Creek Estuary
	State Board numeric objective (tissue): Max. Tissue Residue Level 2.2 ng/g	ND - 490 ng/g (tissue)	Ballona Creek Malibou Lake Santa Monica Bay Nearshore and Offshore Zone Santa Monica Bay beaches
Dieldrin (tissue)	State Board numeric objective (tissue): Max. Tissue Residue Level 0.7 ng/g	4.8 - 16.8 ng/g	Ballona Creek Marina del Rey Harbor - Back Basins
Chlordane (tissue and/or sediment)	Sediment quality guidelines: 4 – 6 ng/g	562 ng/g (sediment) (maximum)	Ballona Creek Santa Monica Bay Nearshore and Offshore Zone
	State Board numeric objective (tissue): Max. Tissue Residue Level 8.0 – 8.3 ng/g	15.3 - 55 ng/g (tissue)	Ballona Creek Estuary Marina del Rey Harbor - Back Basins Westlake Lake Malibou Lake
exotic vegetation	Basin Plan narrative objective		Ballona Wetland
habitat alteration, hydromodification, reduced tidal flushing	Basin Plan narrative objective		Ballona Wetland
debris	Basin Plan narrative objective		Santa Monica Bay Nearshore and Offshore Zone
chloride	Basin Plan numeric objective: 250 mg/l	89 - 330 mg/l (mean of 244 ± 76)	Lake Lindero
specific conductance	Basin Plan narrative objective	1325 - 3530 mg/l (mean of 2937 ± 747	Lake Lindero

* ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, HCH (including lindane), endosulfan, and toxaphene

COMPLETED TMDLS

- Nutrients and coliform (Malibu Creek) – completed by USEPA in 2003
- Trash (Ballona Creek) - 2001
- Coliform (Marina del Rey Harbor) - 2004

CURRENTLY SCHEDULED TMDLS:

- metals & organics (Ballona Creek) – FY04/05
- organics (coastline) – FY06/07
- coliform (Ballona Creek)- FY06/07
- organics (Malibu Creek) – FY08/09

Stakeholder Groups

- *Malibu Creek Watershed Executive Advisory Council (with subcommittees)* A number of stakeholders began meeting in the late 1980's/early 1990's in the Malibu area. Through their efforts, a list of priority issues that need to be resolved was formulated. This lead to the development of a

Natural Resources Plan for the watershed which was prepared by the US Natural Resources Conservation Service. Separate task forces and subcommittees were formed under the Advisory Council, which serves as the main stakeholder forum. The Malibu Creek Watershed Executive Advisory Council consists of members from State and local agencies and organizations, environmental groups, business and dischargers, special districts and the general public. Their mission is to oversee and implement actions that will protect, enhance and restore habitats of the watershed, as well as improve water quality. The Malibu Lagoon Task Force has been quite active in oversight of the UCLA report, Lagoon Resource Enhancement and Management Study, and in prioritization of its recommendations for BMPs and wetlands restoration Also currently active are several subcommittees, including the Habitat and Species Task Force, the Water Quality and Monitoring Task Force and the Education Subcommittee. Advisory Council meetings occur every other month while subcommittees may meet intermittently or regularly.

- *Santa Monica Bay Restoration Commission (Watershed Council, Bay Steering Committee, Implementation Committees,* and *Technical Advisory Committee)* The SMBRC was formed in 1989 under the National Estuary Program and was originally called the Santa Monica Bay Restoration Project; it is charged with the responsibility of assessing the Bay's problems, developing solutions, and identifying implementation procedures. A Bay Restoration Plan was developed and is in the process of being implemented. A Regional Board member and sometimes a staff member attend the quarterly meetings of the Watershed Council, while another staff member attends the bi-monthly Technical Advisory Committee meetings. More information about the SMBRC may be found at their website http://www.santamonicabay.org/

- *Ballona Creek Watershed Task Force* The task force was formed in 2000 as a stakeholder group addressing water quality and habitat issues in the watershed. Its most recent focus has been development of a Ballona Creek Watershed Management Plan, an effort funded largely by the Proposition 13 Watershed Protection Program. This Plan is now completed and can be found at http://www.ladpw.org/wmd/watershed/bc.

- *Topanga Watershed Committee* The committee was formed in 1998 as a followup to previous a community group working on developing alternatives to traditional flood control measures. Their focus has expanded to include general watershed management and protection activities as well as volunteer monitoring. A watershed management plan has been developed. Work has also been completed to define the extent of restoration feasible to Topanga Lagoon. A 205(j) grant-funded project conducted baseline water quality monitoring for the past two years during both dry and weather. More information about this group may be found at their website http://www.topangaonline.com/twc/index.html.

Past Significant Activities

WATERSHED MANAGEMENT

The first edition of a State of the Watershed Report was produced in June 1997 which assessed water quality using data from the SMBRC and the Regional Board as well as other data provided by Watershed Council members; this document will continue to evolve and be updated.

WETLANDS PROTECTION AND MANAGEMENT

In the Malibu area, The Southern California Wetlands Recovery Project, funding for the Cold Creek Riparian acquisition was approved by the Coastal Conservancy in June 2001 and acquisition was completed in October 2001.

MONITORING AND ASSESSMENT

This watershed was the focus of SWAMP monitoring in FY02/03.

UCLA was under contract with the State Board to provide data needed for establishment of nutrient TMDLs in several watersheds within the Region including Calleguas Creek, Santa Clara River, and Malibu Creek. By understanding the inter-relationships between water quality and habitat condition and the resulting effects that these interactions have on the biological communities of coastal watersheds, this research was intended to further our understanding of the ecology of southern California watersheds. Besides providing information supporting the establishment of nutrient TMDLs for these three impaired coastal watersheds, the data collected would provide insight into how these TMDLs might be complied with in the future. Three specific objectives of this project were: 1) investigate the relationships between water quality (e.g. nutrients), habitat quality, and the biological community, 2) investigate how water quality and biological communities change throughout particular target reaches representing different land uses, and 3) compare the relationships between water quality, habitat quality, and biological communities among different watersheds. The work is a continuation and extension of a Regional Environmental Monitoring and Assessment Program (R-EMAP) project in the Calleguas Creek Watershed. R-EMAP us part of a larger national effort by the USEPA to assess the condition of the nation's ecological resources.

The Southern California Coastal Water Research Project (SCCWRP) was under contract with the State Board to provide technical support for the Regional Board's TMDL development efforts. Several related tasks conducted in the Malibu Creek Watershed included: 1) an assessment of the current level of impairment to water quality from algal biomass in the Creek through dissolved oxygen measurements, 2) an assessment of the current level of impairment to water quality from algal biomass in the Creek through a survey of algal biomass and species composition at multiple locations as well as collection of water quality samples and surveys of habitat types, and 3) a determination of whether nitrogen or phosphorus limits algal growth in order to develop appropriate water quality objectives.

NONPOINT SOURCE PROGRAM

A number of nonpoint source control strategies have been undertaken in the Malibu Creek Watershed. Those that involved restoration of aquatic life beneficial uses include streambank and riparian corridor habitat restoration projects funded by 319(h) monies undertaken by the Resource Conservation District of the Santa Monica Mountains and the Department of Parks and Recreation. Additionally, the Resource Conservation District has prepared a manual for horse owners in the areas detailing ways to prevent nonpoint source inputs from their land (funded by 319(h) monies). Also, the City of Calabasas is using 319(h) money to develop and coordinate a watershed education center and library. A 319(h) project involving restoration of Zuma Lagoon recently concluded. The goals of the project were: enhancement of existing native habitats, an increase in habitat diversity and expansion of freshwater marsh and willow riparian habitats through the use of native plantings, establishment of a sycamore alluvial

woodland/coastal scrub habitat, and development of an interpretive area and trails that would serve to educate the public regarding the biological and cultural resources of the site.

The SMBRP report, "Making Progress: Restoration of the Malibu Creek Watershed" (January 2001) includes Table 1.3, Key Watershed Projects, Studies, Stakeholder Groups and Partnerships. It lists 17 different non-point source projects that have been implemented in the Malibu Creek Watershed over the past decade to address water quality and habitat issues.

Current Activities

The following is a summary of current regional board activities and strategies for dealing with point and nonpoint source pollution as well as other issues of concern in the Santa Monica Bay WMA.

CORE REGULATORY

Revisions of most of the major permits took place during 1997. Many of the minor discharges are now regulated under general permits. Portions of a regional ocean monitoring program are currently being implemented and other aspects of it are being developed (see Region-wide Section for additional details). Watershed (inland) regional monitoring programs are being developed with the dual purpose, in many instances, of both creating a more effective program and collecting the needed data to determine mass loading allocations. Ongoing work related to individual NPDES permits includes review and assessment of monitoring data, conducting compliance inspections, and pursuing enforcement actions if necessary. Due to limited resources, only the basic regulatory activities are performed: review of dischargers' monitoring reports, minimum necessary inspections and sampling, issuance/renewal of permits, levels 1 and 2 enforcement actions (noncompliance and violation notification), case handling, and answering inquiries from the public.

Core regulatory responsibilities also include administration of the consent decrees for full secondary treatment compliance by the City of Los Angeles and the County Sanitation Districts of Los Angeles County (CSDLAC) and a 1990 Settlement Agreement with the City of Los Angeles. Another responsibility is oversight of the approved pretreatment programs for the joint outfall system for the City of Los Angeles and the CSDLAC and oversight of the sewage collection systems. Also, given the recent surge in sewage spills into Ballona Creek, the Regional Board needs to exercise its authority through use of enforcement actions to require the City of Los Angeles to complete its planned infrastructure improvement and enhance its vigilance over the existing sewer system.

In addition, although the permit for the Tapia Water Reclamation Plant in the Malibu Creek Watershed was renewed in 1997, there were appeals and changes which resulted in the permit being revised again in December 1999. Staff continue to spend significant effort on this permit due to contentious issues such as the summer flow prohibition, and pending nutrient and total maximum daily load limitations.

However, the Regional Board also needs to encourage and support the development and implementation of innovative structural and non-structural BMPs under the municipal storm water permit. In the Ballona Creek Watershed, over the next two years, many projects funded under Proposition A will be implemented. Promoted by the SMBRP, co-permittees within the watershed have collaboratively or individually conducted pilot projects to test new catchbasin retrofit devices and the effectiveness of street sweeping methodologies. The City of Los Angeles also conducted a study of impacts of street washing

in homeless-aggregated areas. The results of these studies/pilot projects may lead to possible wide application of some new BMPs over the next two years.

The Santa Monica Bay Watershed Management Area falls within Los Angeles County which has been covered by a municipal storm water permit since 1990. The third five-year permit was adopted on December 13, 2001. This permit covers Los Angeles County and all the incorporated cities, except the City of Long Beach, which was issued a separate municipal storm water permit in 1999. The Los Angeles County Flood Control District is the Principal Permittee. Under the requirements of the permit, the Permittees will implement the Storm Water Quality Management Plan which includes the following components: (a) Program Management; (b) Public Information and Participation Program; (c) Industrial/Commercial Facilities Program; (d) Development Planning Program; (e) Programs for Construction Sites; (f) Public Agency Activities; and (e) Illicit Connection/Illicit Discharge Elimination Program. These programs collectively are expected to reduce pollutants in storm water discharges to the maximum extent practicable. In addition, the County will conduct a storm water monitoring program to estimate mass emissions and toxicity of pollutants in its waters, evaluate causes of toxicity, and several other components to characterize storm water discharges and measure the effectiveness of the Storm Water Quality Management Program. The permit can be downloaded from the Regional Board Storm Water website at
http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/la_ms4_final.html.

An important requirement of both the Los Angeles County and the City of Long Beach municipal storm water permits is implementation of the Standard Urban Storm Water Mitigation Plans (SUSMPs) and numerical design standards for Best Management Practices (BMPs), which municipalities began implementing in February 2001. The final SUSMP was issued on March 8, 2000, and amended in the permit, adopted on December 13, 2001. The SUSMP is designed to ensure that storm water pollution is addressed in one of the most effective ways possible, i.e., by incorporating BMPs in the design phase of new development and redevelopment. It provides for numerical design standards to ensure that storm water runoff is managed for water quality and quantity concerns. The purpose of the SUSMP requirements is to minimize, to the maximum extent practicable, the discharge of pollutants of concern from new and redevelopment. The requirements are very similar to the Ventura County SQUIMP.

The numerical design standard is that post-construction treatment BMPs be designed to mitigate (infiltrate or treat) storm water runoff from the first ¾ inch of rainfall, prior to its discharge to a storm water conveyance system.

MONITORING AND ASSESSMENT

Portions of a regional ocean monitoring program are currently being implemented and other aspects of it are being developed (see Regionwide Section for additional details). Watershed (inland) regional monitoring programs are being developed with the dual purpose, in many instances, of both creating a more effective program and collecting the needed data to determine mass loading allocations. Bight'03, Bight'98 and 1994 Southern California Bight Pilot Project (SCBPP) monitoring covered coastal areas (including harbors and marinas in Bight'98 and Bight'03).

The SMBRC, with participation of the Regional Board, has been developing a new sources and loading monitoring design for point and nonpoint source ocean discharges from the Santa Monica Bay

WMA/wasteshed. The overall objective of this monitoring program design, which applies to any watershed, is to produce improved estimates of loadings to the Bay in order to:

- make cost-effective trade-offs in reducing inputs of toxic pollutants
- evaluate the effectiveness over time of source control and treatment options taken to reduce inputs to the Bay
- assist in evaluating receiving water impacts

Because it is not practical to continuously monitor every stream/storm drain, the monitoring approach adopted by the municipal storm water permit is to rely on sampling of a set of mass loading stations in combination with a set of land use stations. Data collected through sampling of these stations will then be used to calibrate models that produce mass loading estimates for a specific watershed/subwatershed. This approach is further supplemented by several monitoring programs and research projects with narrower objectives. Under the municipal storm water permit, the Los Angeles County Department of Public Works (LAC-DPW) is conducting a critical source monitoring project to estimate the relative loading from five selected facilities/sites with high potential of generating pollutants. Caltrans conducts monitoring aimed at estimating loadings from highway runoff. For the last two years, LAC-DPW has funded USC/UCBS/SCCWRP to define the dispersion zone of storm water in the nearshore ocean and to study impacts from storm water runoff by measuring sediment contamination, toxicity, and the benthic community response index in the dispersion zone. The USACE has worked with UCLA to collect storm water samples in Ballona Creek to calculate relative contributions of pollutant loadings from each tributary and major land use types. SCCWRP also has on-going efforts to investigate the loading and impacts of storm water runoff throughout the Southern California region, including creeks in the Santa Monica Mountains.

Besides information provided by these existing efforts, there are still information gaps that hinder the fulfillment of the identified monitoring objectives. Specifically, the following needs to happen during the next two years:

- A project that develops methodology for and conducts status and trend analysis using stormwater monitoring data collected under the municipal NPDES permit.
- A study that uses more frequent monitoring during different periods of a storm to generate a "pollutograph." This information will greatly improve the accuracy of pollutant loading estimates generated by modeling efforts.
- A project that resolves the issue of consistency in detection limits used by different dischargers. The Regional Board needs recommendations and rationale on the proper detection limits for each measured constituent to estimate and make comparisons of loadings from various sources (point and nonpoint sources).
- The study and application of molecular markers for storm water runoff. The marker can be used to identify the area of storm water influence and therefore aid further study if the runoff impacts in receiving water sediments.
- Toxicity Identification Evaluations to identify the sources of storm water/urban runoff toxicity.
- A study of the effectiveness of structural BMPs that are implemented using Proposition A grant money funds. Since many pollution control devices are new and considered to be pilots in the Region, the review panel for the Proposition A funds recommended that the regional Board should take on the responsibility to both monitor the progress in implementing these projects and to evaluate the effectiveness of installed devices for regional applicability.
- A study of the effectiveness of non-structural BMPs (e.g. public outreach) implemented under the municipal storm water permit. The information will be useful for developing future storm water pollution control strategies.
- Development of practical sanitation survey tools.

These projects would require either additional staff time or need to receive funding from various grant sources.

A marine resource inventory and habitat mapping (available on CD) are two projects recently completed for Santa Monica Bay. The objectives of these projects are to produce a detailed inventory of the Bay's habitats, especially the Bay's unique and sensitive habitats that have been overlooked in past monitoring and inventory including intertidal, kelp bed, short bank, Torrance Beach, and artificial reefs. It also provides necessary baseline for the valuation (and potential damage assessment) of the Bay's habitats, for special designation (e.g. ecological reserve) of certain areas, and for planning measures against abuse and depletion by pollution, development, or excessive harvesting. Additionally, it helps to identify the "habitats of concern" or "species of concern" and identify cost-effective methods for restoration and rebuilding efforts. It is anticipated that the initial mapping and inventory efforts planned by the SMBRP will identify many data gaps that need to be filled by special studies that:

- quantify the amount of substrate in the Bay and the Southern California Bight capable of supporting kelp beds
- assess the conditions of kelp habitats in the vicinity of Malibu
- analyze trends in the abundance of target species such as sea stars, owl limpets, and sea grasses based on historical surveys
- analyze trends in community composition and diversity of intertidal habitats in the Bay
- survey the abundance of resident species in the Bay
- assess the population sustainability of key commercial and sportfishing species

These studies could qualify to receive grant funding.

There are also a number of ongoing volunteer monitoring efforts underway in the WMA. They include storm event sampling at over 30 Bay storm drains coordinated by the Santa Monica BayKeeper, gutter patrol monitoring in inland neighborhoods and monitoring of Malibu Lagoon and the lower Creek for water quality and biological parameters coordinated by Heal the Bay, water quality and biological monitoring and surveys of Malibu Lagoon coordinated by the Resource Conservation District of the Santa Monica Mountains, monitoring of the upper Malibu Creek Watershed, and coliform monitoring of the surf zone off of Malibu coordinated by the Malibu Chapter of the Surfrider Foundation.

WETLANDS PROTECTION AND MANAGEMENT

The wetlands priority in the Ballona Creek Watershed is Ballona Wetlands. The Coastal Conservancy has provided funding for development of a restoration plan for the wetlands. Depending on the development plan approval process, the strategy is to ensure that adequate funding sources are secured for implementation of the restoration plan.

In the Malibu Creek Watershed, the Southern California Wetlands Recovery Project considers the Upper Malibu Creek Feasibility (Rindge Dam) and Malibu Lagoon Habitat Enhancement Plan development (implementation of recommendations from the UCLA study) high priorities in their current workplan. Further up the coast, funding for the Solstice Creek Steelhead Enhancement Project was approved by the Coastal Conservancy in March 2001. The project will address several steelhead passage barriers in the creek.

The Santa Monica Mountains Conservancy is a state agency created by the Legislature in 1979 charged with primary responsibility for acquiring property with statewide and regional significance, and making those properties accessible to the general public. The Conservancy manages parkland in the Santa Monica Mountains, Santa Susana Mountains, the Simi Hills, the Santa Clarita Woodlands, the Whittier-Puente Hills, the Sierra Pelona, the Los Angeles River Greenway, the Rio Hondo, the Verdugo Mountains, the San Gabriel Mountains, and the San Rafael Hills. The agency's goals are to: 1) implement the Santa Monica Mountains Comprehensive Plan, 2) implement the Rim of the Valley Trails Corridor Master Plan, 3) implement the Los Angeles County River Master Plan, 4) further cooperation with local governments in the region to secure open space and parkland, and 5) expand education, public access, and resource stewardship components in a manner that best serves the public, protects habitat, and provides recreational opportunities.

<u>*SMBRC Proposition 12 Grant Program*</u>: The *Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act (Proposition 12*), passed in March 2000, provides a total of 25 million to projects that clean up or rehabilitate the resources of Santa Monica Bay. It was the first significant source of state funding to carry out the goals of the 1995 Santa Monica Bay Restoration Plan. By late 2000, nineteen projects, totaling approximate $6 million, representing the first phase of the bond money support, had been awarded funding under this Prop. 12 Grant Program. The projects included a wide array of actions that address pollution prevention, habitat restoration, as well as critical research and educational needs of the watershed. Many of the projects address information and action needs identified in this document. Proposition 12 funds were awarded to a number of entities for habitat restoration or assessment work. Ten projects were funded including: Shallow Water Habitat Mapping in Santa Monica Bay (CSU Monterey Bay Foundation), Kelp Restoration Project (Santa Monica BayKeeper), Solstice Creek Restoration (National Park Services), Malibu Creek Habitat Enhancement: Removal of *Arundo donax* (Mountains Restoration Trust), Development of a Stream Health Index for the Malibu Creek Watershed (Heal the Bay), Restoration of Natural Resources in Rocky Intertidal Habitats in Santa Monica Bay (UCLA Institute of the Environment), and Removal of Rindge Dam (California Department of Parks and Recreation).

NONPOINT SOURCE PROGRAM

Nonpoint source pollution to the ocean (greater Santa Monica Bay) includes urban runoff, aerial fallout, spills, sediment resuspension, oil seeps, vessel traffic, and advection. Strategies for dealing with urban and storm runoff were discussed under the Core Regulatory section. In addition, a priority over the next two years is to divert dry weather flows from all problematic storm drains to the sewer system. Currently, diversions of six storm drains (Pico-Kenter, Ashland, Brooks Ave., Herondo St., Pershing Dr., and Thornton Ave.) have been fully or partially funded through Proposition A money. Therefore, more attention will be shifted to deal with Santa Monica Canyon, the only problematic drain that has not been scheduled for diversion, and Santa Monica and Redondo Piers, where measures to prevent sewer system leakage may be needed.

Strategies have been developed and efforts are underway to address aerial fallout, sediment resuspension, septic systems, marinas, and vessel traffic.

<u>*Clean Beaches Initiative:*</u> On July 27, 2001, Governor Gray Davis signed the Budget Act of 2001 to use Proposition 13 grants to fund Clean Beaches Initiative (CBI) Projects. The major goal of the CBI is to reduce health risks and increase the public's access to clean beaches.

Septic Systems: In January 2000, the Santa Monica Bay Restoration Commission (SMBRC) convened a Task Force to address the issue of septic system management throughout the northern Santa Monica Bay watersheds. The area of focus covers three jurisdictions: the City of Malibu, the City of Los Angeles, and areas of unincorporated Los Angeles County. In order to bring together the various perspectives and expertise on this issue, the Task Force was composed of representatives from various stakeholder organizations including: State Department of Health Services (SDHS); Los Angeles Regional Water Quality Control Board (RWQCB); California Coastal Commission; Los Angeles County Departments of Public Works, Health Services and Regional Planning; City of Los Angeles Department of Building and Safety; City of Malibu Environmental and Building Safety Department; Los Angeles County Board of Supervisors Office - Third District; and Heal the Bay.

The Task Force's goal has been to develop solutions to the problems associated with septic systems and their impact on water quality, while at the same time identifying the obstacles that must be faced in trying to mitigate the situation. By bringing an understanding of these obstacles into the formulation of its recommendations, the Task Force has tried to ensure that the solutions are implementable and still fully address the problem at hand.

After its review of the existing management and regulatory framework for septic system management in the Bay's watersheds, the Task Force's recommendations suggest that improving management of septic systems will require significantly greater oversight by both state and local agencies as well as improved coordination between them.

The Task Force recommends a comprehensive approach to septics system management in northern Santa Monica Bay that includes the following elements:

- **Issue waste discharge requirements (WDRs) for all existing multi-family and commercial establishments in northern Santa Monica Bay watersheds.**
  - The RWQCB should issue WDRs for all existing commercial and applicable multi-unit developments in northern Santa Monica Bay watersheds that are not currently permitted. It is estimated that there are approximately 380 systems that need permits in this area.
  - Develop general WDRs for common types of commercial and multi-unit residential units to facilitate the permitting process.
  - Seek funding to increase RWQCB staffing to reduce the permit backlog.

- **Establish a comprehensive permitting program for operation, inspection and monitoring of all septic systems.**
  - Local agencies should require operational permits for all (commercial, multi-unit and single-family) septic systems. These permits would be issued on a five-year renewal basis, with shorter intervals for poorly performing systems.
  - Develop a comprehensive inspection and monitoring program that would be implemented through the operational permits. Require that initial inspections be conducted between six and 12 months after installation of new systems.
  - All properties served by septic systems should be permitted within five years of the adoption of these recommendations by local municipalities.
  - Develop computerized management systems to track and analyze permits, maintenance and inspection schedules.
- **Design and implement a comprehensive groundwater monitoring program to improve assessments of septic system impacts to receiving waters and groundwaters.**

  - Design a regional groundwater monitoring program in order to obtain information needed to better understand groundwater conditions and reduce the number of monitoring wells that may be required of permittees. This monitoring program would be implemented through WDRs.

- **Establish a coordinated approach for oversight of septic systems, including modification/update of the WDR waivers between the RWQCB and local agencies.**
  - The RWQCB and local agencies should establish agreements that ensure consistent implementation of a policy that all commercial and multisystems obtain WDRs before building permits are issued by local agencies.

- **Develop a grants program for qualified homeowners to provide financial assistance to upgrade failing systems.**
  - Establish a financial assistance program for homeowners for which the upgrade, replacement or repair of failing on-site waste disposal systems would be a significant financial hardship.

- **Develop more stringent requirements for installation and operation of wastewater management systems in environmentally sensitive areas.**
  - Utilize a risk-based approach in implementing the operational permit program, e.g. identify environmentally sensitive areas to be addressed as high priority, develop more stringent operating permits for wastewater management systems in these areas.

- **Establish local septic system maintenance districts to oversee and fund the permitting, inspection and monitoring activities.**
  - The process for establishing such a district is outlined in the State Health and Safety Code.

- **Conduct public outreach to residents regarding proper operation and maintenance of septic systems.**
  - Educational outreach to septic system owners should be conducted regarding proper operation and maintenance of septic systems and regarding the implementation of the proposed permitting and inspection programs.

The Task Force is currently seeking approval and support of these recommendations from the agencies responsible for their implementation. Finalized recommendations will be incorporated into the Santa Monica Bay Restoration Plan with the ultimate goal of implementation by all appropriate entities.

Aerial Fallout: Funded by USEPA , the SMBRC, and the Los Angeles County Department of Public Works, researchers at UCLA and SCCWRP completed a study in 2001on air transport/deposition of toxic contaminants to the Bay. The study sought to establish what the total annual pollutant load from air deposition is to both Santa Monica Bay and the Bay watershed, assess how large the load is compared to other sources, and determine how the loads varies spatially and temporally. The Regional Board can use this information to evaluate the effectiveness of air pollution control measures. The study's findings indicate that:

- Aerial deposition is a significant contributor to the overall pollutant load to the Bay for trace metals such as lead, chromium, and zinc, and less so for copper and nickel. The atmospheric portion of inputs for the five metals varied from 13 – 99% of the total trace metal inputs to Santa Monica Bay considering both atmospheric and non-atmospheric sources.
- On an annual basis, daily dry deposition of metals on Santa Monica Bay and its watershed far exceeds the amount deposited during rain events. Also, chronic daily dry deposition is far greater than deposition occurring during Santa Ana conditions when large volumes of polluted air blows from inland out to sea. Daily quantities of metals deposited during Santa Ana and rainfall events are comparable to the chronic daily deposition,

however, since rainfall and Santa Anas are infrequent events, they are not significant factors in determining the total deposition load.

- Most of the mass of metals deposited by dry deposition on Santa Monica Bay and its watershed originates as relatively large aerosols from area sources (off-highway vehicles such as construction equipment and small businesses) in the Santa Monica Bay watershed.

The study's implications for management of nonpoint source pollution are several and include:

- Daily chronic dry deposition of metals must be a significant nonpoint source in establishing TMDLs for Santa Monica Bay.
- Reductions of nonpoint source inputs may require coupling between air quality and water quality regulatory actions and policies.

Sediment Resuspension: Currently, there is no study specifically planned to examine sediment resuspension as a source of pollutant loading to the Bay. However, the USEPA Superfund investigation on the Palos Verdes Shelf evaluated the feasibility of capping DDT-contaminated sediments as a remediation measure. USEPA conducted a pilot project in September 2000 to evaluate cap placement methods and cap stability at three test cells on the Palos Verdes Shelf. This project will provide valuable information that will be used to design a capping project to isolate DDT-contaminated sediments on the Palos Verdes Shelf and prevent resuspension and distribution of these contaminants to other areas.

Marinas and Vessel Traffic: Boating wastes (vessel traffic) are potentially a significant source of loadings into the Bay as well as into harbors of pathogens, trash, and some heavy metals. Launched in 1996, the SMBRC has implemented a comprehensive boater education program for the southern California counties. Their program addresses non-point source pollution generated from boat maintenance and activities. This includes sewage, used motor oil, trash and debris, fuel, heavy metals and cleaning agents. One of the SMBRC's focuses is to promote clean marinas. Their Clean Marina 319(h) grant, awarded by the SWRCB, will further help educate boaters, facilitate clean-out practices, and promote recognition of successes.

CWA Section 319(h)-funded Activities: A 319(h)-funded nonpoint source control strategy being undertaken in the Malibu Creek Watershed is evaluation of BMPs for horse stables and continuation of volunteer Stream Team monitoring by Heal the Bay. The Santa Monica BayKeeper also received 319(h) grant funds in 2001 to continue a citizen monitoring program involving storm drains flowing into Santa Monica Bay and to add in additional monitoring of Ballona Creek.

We continue to support as a high priority for 319(h) program funding in FY2002/03 projects to restore wetlands in Malibu, Topanga, and Trancas Lagoons.

Proposition 13-funded Activities: The Southern California Coastal Water Research Project (SCCWRP) received Proposition 13 funding (Coastal Subaccount) in 2001 for two projects affecting Santa Monica Bay. One is "Implementation and Evaluation of BMPs for Improving Coastal Water Quality." This is a multi-regional project which will conduct enhanced BMP effectiveness monitoring through use of more relevant indicators such as toxicity removal and reduction of pesticides and biologically-available metals. Samples will be collected during storm events. The other funded project is "Implementation of Coliform TMDL for Santa Monica Bay Beaches Using Standard Methods and Rapid Indicator Detection Techniques." AB411 requires weekly bacterial indicator monitoring and posting of beaches with chronic contamination. AB538 requires source identification at beaches with storm drains that have chronic

contamination. This project will identify sources of fecal contamination to characterize the presence of human versus animal contamination.

Proposition 12-funded Activities: A number of entities received Proposition 12 funding distributed by the Santa Monica Bay Restoration Project in late 2000. Four projects were approved in the "Pollution Prevention" category: Ballona Creek Litter Monitoring and Collection Project (County of Los Angeles), Risk Assessment of Decentralized Wastewater Treatment Systems (City of Malibu), Catch Basin Debris Excluder Devices (City of West Hollywood), and Ballona Creek Water Quality Improvement Project (City of Culver City). Two projects were approved in the "Public Education" category: Ocean Discovery Center EcoPak Program (UCLA) and An Interactive Information System for Santa Monica Bay (USC Wrigley Institute for Environmental Studies). More information about these projects may be found at http://www.santamonicabay.org/.

Additionally, work will continue with the Bay Watershed Council, the Implementation Committees for Ballona Creek and Malibu Creek, with the Storm Water Santa Monica Bay Watershed Committees, and with other Santa Monica Bay Watershed stakeholder groups, in order to identify any necessary modifications and/or new nonpoint measures that should be implemented through the Bay Restoration Plan or individual Ballona Creek and Malibu Creek Plans.

BASIN PLANNING

We will continue to develop strategies for the implementation of priority actions identified under the Santa Monica Bay Restoration Plan, including protection of the Ballona Wetlands, as well as additional actions targeted by the Watershed Council for action. We will also integrate these into the Watershed Council's Plan and implementation activities.

The 2001 Triennial Review identified a number of high priority issues affecting this watershed management area. One currently funded activity is adoption of TMDLs as Basin Plan amendments as required under the Consent Decree. Resource use is estimated at 0.5 PY/TMDL. Another high priority activity that can occur within three years based on the current level of funding is evaluating specific proposals for changes to beneficial uses. After evaluation of the region-wide list, one to three beneficial use revisions would be addressed. Those specific to the coastal creeks include adding the warmwater habitat use to Cold Creek, identifying Marie Canyon and Sweetwater Creek as distinct waterbodies, adding (all potential) spawning habitat, fish migration, protection of rare and endangered species, and cold water habitat (references to steelhead trout) to Solstice Creek, and add protection of rare and endangered species (steelhead trout and southwestern pond turtle) to Topanga Creek. Approximately 0.1 PYs is needed per beneficial use change.

Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

WATERSHED MANAGEMENT

The Los Angeles County Department of Public Works received a Proposition 13 grant (Watershed Protection Subaccount) in 2001 to develop a Ballona Creek Watershed Management Plan. This work was completed in 2004. Although the greater Santa Monica Bay has a restoration plan, this

subwatershed with its many urban impacts needs special attention. Since the Creek has also been shown to impact the nearshore environment of Santa Monica Bay, additional benefits will result.

Near-term Activities

Specific resource needs are described in the Region-wide Section of this document.

Since most of the NPDES permits for this watershed were renewed in 1997, in general, core regulatory activities during the next four years will focus on permit compliance, monitoring report review, and enforcement as needed. Work continues on lower Malibu Creek issues. Members of the watershed team will be involved with periodic updates of the State of the Watershed Report. Additionally, there will be on-going interaction with stakeholders and followup on goals established during the permit renewal phase.

Regarding resources needed to continue oversight of the Los Angeles County storm water permit (regulatory-based BMP management), regulatory personnel will be revising the annual program report format, auditing the permittees, evaluating the revised model programs, and reviewing reports and alternate programs submitted by permittees. The eighteen municipal program audits must be completed and matched with BMPs selected to address the pollutants of concern to facilitate development of TMDLs. The Caltrans storm water management program BMPs must be matched with pollutants of concern to facilitate TMDLs impacted by transportation land use. In addition, SWPPPs for all industrial storm water facilities in the WMA must be reviewed and BMPs matched with pollutants of concern to facilitate TMDL development.

A preliminary review of resources for core regulatory activities against cost factors has determined that our region is seriously underfunded for our baseline program. We will be seeking more funding for our core program activities.

Issuing waste discharge requirements for all existing multi-family and commercial establishments in northern Santa Monica Bay watersheds not currently under permit (with any necessary followup work), as recommended by the Santa Monica Bay Restoration Commission septic systems task force, will entail requiring **an additional 2 – 4 PYs per year for at least the next five years**.

There are a number of information gaps that need to be filled over the next few years such as:

- Review existing data and assess fish contamination levels in the entire Santa Monica Bay (not just the Palos Verdes Shelf).
- Analyze the link between contaminants in fish and biological impacts to shore birds, sea birds, and marine mammals.
- Continued involvement in updates to the baseline State of the Watershed Report, focusing on filling data gaps and evaluating cumulative impacts as monitoring data become available from dischargers.
- Regional Board ambient monitoring, and evaluation of monitoring data from the municipal storm water program.

- An important issue to address at some point in the future is the need to protect the populations of threatened and endangered species in the Bay which include the California least tern, Belding's savannah sparrow, western snowy plover, California red-legged frog, California brown pelican, El Segundo blue butterfly, steelhead trout, and tidewater goby. Depending on the level of existing efforts, the needs for each species range from monitoring and assessing current conditions, to developing or implementing strategies for population recovery.

- In the Malibu Creek Watershed, a number of long-term projects are being considered or are in progress which the Regional Board will be involved with to some extent. The Department of Parks and Recreation and the City of Malibu are investigating development of a plan to reduce unseasonal breaching of the lagoon. Also, the Rindge Dam Task Force is investigating the possibility and alternative ways to remove the dam in order to facilitate access to the upper watershed by steelhead trout. There is no projected end date for this project. Additionally, although not a nonpoint source project per se, the POTW which discharges to Malibu Creek is under a discharge prohibition starting each April 15 through November 15 of each year, except during times of plant upset, storm events, or the existence of minimal streamflow conditions that require flow augmentation in Malibu Creek to sustain endangered species. However, in the long-run, this discharge prohibition may have many other implications on water quality and quantity in the Creek and Lagoon.

- Develop a strategy for regulating septic systems in the Malibu area.

- A priority planning issue is to define water quality standards for nutrients in Malibu Lagoon and Creek.

- Develop inventory and establish monitoring stations for invasive exotic and sensitive plant species in riparian areas of northern Santa Monica Bay watershed.

- Develop strategy to control/eradicate invasive plant and animal species such as Arundo and crayfish.

- We will also continue our involvement with stakeholder activities and the pursuit of funding options, especially those involving implementation of nonpoint source measures (coordinate grant activities) as well as other outreach activities such as speeches, meetings, and participation in environmental events. As resources permit, we will also work with stakeholders to implement provisions of the Coastal Zone Act Reauthorization Amendments.

- Comments on watershed issues in CEQA documents (for the highest priority projects) will continue to be prepared; however, there is currently no funding for this program.

- Implement biological monitoring in priority watersheds (e.g. Malibu, Topanga).

- As a followup to the aerial deposition study recently completed:
  - Pinpoint sources of aerial deposition in the watershed
  - Study the deposition of other pollutants of concern (nutrients, pesticides, mercury)
  - Determine how aerial deposition is transformed into urban runoff, and how much of it is transformed into runoff

Potential Long-term Activities

In the long-term, Basin Planning activities will include continued participation in both internal and external watershed planning efforts and further incorporation of watershed management and principles and watershed-specific priorities into future updates of the Basin Plan, where appropriate.

A wetlands management issue that will continue to impact core regulatory activities in Malibu Creek is the listing of the creek as critical habitat for the endangered steelhead trout. Water quantity will continue to play as critical a role as water quality in the issue.

We will continue to develop strategies for the implementation of priority actions identified under the Santa Monica Bay Restoration Plan, including protection of the Ballona Wetlands, as well as additional actions targeted by the Watershed Council for action. We will also integrate these into the Watershed Council's Plan and implementation activities. Additional issues may include: 1) conduct or review studies to evaluate and refine (if necessary) the designated beneficial uses for certain waterbodies, 2) consider the establishment of wet weather criteria in some areas, 3) integrate water supply and quality issues with local land use planning and management, and 4) institute better coordination of multi-agency reviews of environmental impacts for flood control and development projects, including the consideration of regional mitigation programs.

Section 3. Regionwide Activities

There are many activities conducted at the Regional Board which do not apply to a specific watershed; instead they represent ongoing regionwide strategies and policies, or programs which are not directly linked to the rotating watershed cycle. Also, statutory, regulatory, or funding requirements may dictate completion of some activities at odd intervals throughout the five-year watershed cycle (such as increased emphasis on pretreatment inspections). We expect that some of these activities, which include triennial reviews, water quality assessment (305(b)) reports, updating lists of impaired waterbodies (e.g. the federal 303(d) list), can be negotiated into a watershed. See Table 2 below for more examples of watershed versus non-watershed related activities.

Table 2. Example Work Activities and Their Potential Fit (or not) Into Watershed

Watershed Tasks	*Non-Watershed Tasks*
Renew permits	Issue new permits
	Develop new general permits
Integrate municipal storm water program	Issue individual industrial and storm water permits
Conduct inspections for watershed permits	Conduct inspections on new permits
Enforcement (in-cycle compliance)	Enforcement (spills, out of cycle compliance)
Implement NPS controls	Develop regional strategies to address NPS problems
TMDL/WLAs	
Develop, coordinate and implement watershed monitoring	Coordinate monitoring on a regional scale
Water Quality Assessments (State of the Watershed Reports, partial updates to 305(b) by watershed)	Biennial 305(b) Reports to USEPA
Develop watershed policies	Develop regional policies
Watershed-specific Basin Plan Updates	Regional Basin Plan Updates, Triennial Reviews
Data management (input and use by watershed)	Regional Database management
GIS (input of watershed-specific layers and information)	GIS (development and input of regional layers and Maintenance of system)
Watershed-specific outreach/education	General outreach education
Incorporation of CEQA and 401 Decisions into watershed planning (as groups are formed, and as timing permits)	Timely review of CEQA documents, 401 certifications per statutory deadlines

And, while the Watershed Management Initiative strives to integrate and coordinate the various Regional and State Board programs and address the highest priority funding needs for those programs, there is also need to respond to and accommodate priorities established by the individual Regional and State Boards' members, priorities established prior to the WMI which run on their own timelines, or other new mandates which may affect the way the WMI is implemented in a Region. It is important to re-state here that the WMI is not a new program but rather a way to describe our approach to integrating existing and newly evolving programs and mandates. The following describes our overall approach to implementing a number of programs (some statewide mandates) and other Board priorities.

Core Regulatory

One activity involves renewing individual permits in a timely fashion. General permits (see below) are also renewed to incorporate Basin Plan amendments and fine-tune other requirements. Other activities include inspections and audits. Major NPDES dischargers are inspected at least once per year while minor dischargers are inspected at least once during the life of the permit. There are twelve POTWs with pretreatment programs which are either inspected or audited once per year. The twelve programs are: Burbank, Camarillo SD, Las Virgenes MWD, Los Angeles CSD, City of Los Angeles, Ojai Valley SD, Oxnard, San Buenaventura, Simi Valley CSD, Thousand Oaks, Moorpark WTP, and Santa Paula.

Another activity which has taken up considerable time, and contributes to backlogged permits, is responding to appeals and lawsuits. At issue for a number of permits is a lack of regional nutrient objectives which has translated into a lack of permit limitations and subsequent petitions and/or lawsuits. Ideally, TMDLs would be adopted in the year proceeding permit renewals for a particular watershed. Permit limitations could then be based on allocations from the TMDLs. Also ideally, we would have state-adopted water quality objectives (or an implementation plan for federal numbers) or ecologically-relevant regional objectives for parameters such as nitrogen and phosphorus to use for development of permit limitations. Nutrient objectives will likely be available in the near future but, in the meantime, we continue to experience challenges to their absence.

Core Regulatory – Region 4 General Permits

There are many dischargers in this Region covered by general permits for discharges to surface water through a letter issued by the Executive Officer. This activity occurs as often outside as within the watershed cycle. 40 CFR §122.28 provides for issuance of general permits to regulate a category of point sources if the sources:

a) Involve the same or substantially similar types of operations;

b) Discharge the same type of waste;

c) Require the same type of effluent limitations or operating conditions;

d) Require similar monitoring; and

e) Are more appropriately regulated under a general permit rather than individual permits.

General permits currently in effect include:

- NPDES Permit No. CAG914001 – for discharges of volatile organic compound contaminated groundwater to surface waters (threat/complexity rating 2B)

- NPDES Permit No. CAG994004 – for discharges of groundwater (treated or untreated) from construction and project dewatering to surface waters (threat/complexity rating to be determined)

- NPDES Permit No. CAG994005 – for discharges of groundwater from potable water supply wells to surface waters (threat/complexity rating to be determined)

- NPDES Permit No. CAG674001 – for discharges of hydrostatic test water to surface waters (threat/complexity rating 3C)

- NPDES Permit No. CAG834001 – for treated groundwater and other wastewaters from investigation and/or cleanup of petroleum fuel pollution to surface waters (threat/complexity rating 2B)

- NPDES Permit No. CAG994003 – for discharges of nonprocess wastewaters not requiring treatment systems to surface waters (threat/complexity rating 3C)

As a point of comparison, the highest threat/complexity rating is 1A and the lowest 3C.

Core Regulatory – State Board General Permit

In 2001, State Board adopted a general NPDES permit (NPDES Permit No. CAG990003) for discharges of aquatic pesticides. The permit covers the uses of properly registered and applied aquatic pesticides; it does not cover indirect or nonpoint source discharges from agricultural or other applications of pesticides to land that may be conveyed in storm water or irrigation runoff. It also does not cover applications of pesticides that are not registered for use on aquatic sites.

Although Notices of Intent (NOIs) to be covered under this general permit will be handled by State Board, the Regional Board is responsible for approving monitoring plans, reviewing monitoring reports, conducting compliance inspections, and conducting any appropriate enforcement actions.

Core Regulatory – Storm Water

Storm water activities include those involving the three municipal permits in the Region, facilities regulated under the State's general industrial permit, and construction sites regulated under the State's general construction permit.

Municipal permits

Municipal storm water regulations at 40CFR 122.26 require that pollutants in storm water discharges be reduced to the maximum extent practicable (MEP). The definition of MEP has generally been applied to mean implementation of controls to reduce the discharge of pollutants to the maximum extent practicable using appropriate management practices, control techniques and system, design and engineering methods. Municipalities are required to implement or require the implementation of the most effective combination of BMPs for storm water/urban runoff pollution control.

Municipal permits currently in effect include:

- NPDES Permit No. CAS004003 – adopted in 1999 this is the permit for municipal storm water and urban runoff discharges within the city of Long Beach

- NPDES Permit No. CAS004002 – adopted in 2000 this is the permit for municipal storm water and urban runoff discharges within the Ventura County Flood Control District, county of Ventura, and cities of Ventura County

- NPDES Permit No. CAS004001 – revised in 2001 this is the permit for municipal storm water and urban runoff discharges within the county of Los Angeles

An important part of the municipal permits (Los Angeles County and City of Long Beach) are the Standard Urban Storm Water Mitigation Plans (SUSMPs) and numerical design standards for Best Management Practices (BMPs) which were adopted on March 8, 2000 and implemented by municipalities beginning in February 2001. The SUSMPs are designed to ensure that storm water pollution is addressed in one of the most effective ways possible, i.e., by incorporating BMPs in the design phase of new development and redevelopment. It provides for numerical design standards to ensure that storm water runoff is managed for water quality and quantity concerns. The purpose of the SUSMP requirements is to minimize, to the maximum extent practicable, the discharge of pollutants of concern from new development and redevelopment.

The numerical design standard is that post-construction treatment BMPs be designed to mitigate (infiltrate or treat) storm water runoff from the first ¾ inch of rainfall, prior to its discharge to a storm water conveyance system. Other standards also apply; additional information on the SUSMP may be found on the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/susmp/susmp_details.html.

Retail gasoline outlets (RGOs) were given a categorical exemption by State Board to the SUSMP requirements, partly because the threshold to mitigate developed by the Regional Board which was based on size and RGOs were deemed too small. During the renewal process of the Los Angeles County municipal storm water permit, storm water staff conducted research and developed a proposed threshold for the implementation of design criteria for BMPs at RGOs. The threshold and its technical explanation is described in a technical paper called *Retail Gasoline Outlets: New Development Design Standards for Mitigation of Storm Water Impacts* (06-01). This paper can be found on the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/stormwater.html. The proposed threshold for RGOs was included in the amendments to the SUSMP requirements as described in the permit that was adopted on December 13, 2001.

The Ventura County Municipal Storm Water Permit co-permittees are required to implement similar requirements under the Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan (SQUIMP). The SQUIMP similarly addresses conditions and requirements for new development and significant redevelopment, but does not include numerical design standards for RGOs.

Monitoring has indicated that mass emissions of pollutants to the ocean are significant from the urban watersheds such as the Los Angeles River, Ballona Creek, and Coyote Creek. Studies have found chemical concentrations of pollutants that exceed state and federal water quality criteria in storm drains flowing to the ocean and that beach water quality standards for bacteria indicators (Assembly Bill 411) are often exceeded. The presence of these high levels of bacteria indicate the existence of other pathogenic microorganisms that pose a health risk to humans. A 1996 epidemiological study, conducted by USC under the direction of the Santa Monica Bay Restoration Project, confirmed that swimming in water with significant concentrations of bacteria indicators increases the potential for contracting illnesses, such as stomach flu, ear infection, upper respiratory infection or major skin rash.

Industrial permit

The 1987 amendments to the Clean Water Act established a framework for regulating municipal and industrial storm water discharges under the NPDES Program. In 1990, the USEPA published final regulations that established application requirements for storm water permits. The regulations require

that storm water associated with industrial activity that discharges either directly to surface waters or indirectly through municipal storm drains must be regulated by an NPDES permit.

State Board adopted the Industrial Activities Storm Water General Permit in 1997. The permit requires facility operators to (1) eliminate unauthorized nonstorm water discharges, (2) develop and implement a Storm Water Pollution Prevention Plan (SWPPP), and (3) perform monitoring of storm water discharges and authorized nonstorm water discharges. Facilities that discharge storm water associated with industrial activity requiring a General Permit are listed by category in the Code of Federal Regulations. These categories include manufacturing, mining/oil, recycling, steam electric generating, and light industry, among others. There are approximately 2,770 facilities in this Region covered by the general industrial permit. Most of these sites are in the Los Angeles River Watershed with the San Gabriel River Watershed and the Dominguez Channel and LA/LB Harbor WMA also containing a considerable number.

Construction permit

In 1990, USEPA published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water to waters of the United States from construction projects that encompass five or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES permit.

State Board adopted a general permit for storm water discharges associated with construction activity in 1999 (State Board order No. 99-08-DWQ). It contains narrative effluent limitations and requirements to implement appropriate Best Management Practices (BMPs) which emphasize source controls. Dischargers from sites of one acre in size or larger are required to be covered by the construction stormwater permit.

Elimination or reduction of nonstorm water discharges is a major goal of the general permit. It prohibits the discharge of materials other than storm water and authorized nonstorm water discharges. It also requires development of a Storm Water Pollution Prevention Plan (SWPPP) and monitoring program.

There approximately 1,780 sites covered under the construction storm water permit as of October 2004; this is almost twice the number covered at the time of the 2001 update of the WMI Chapter. The majority of sites are in Ventura and western Los Angeles Counties with 317 in the Santa Clara River Watershed and 276 in the Calleguas Creek Watershed. However, there are also a large number of sites (456) in the Los Angeles River Watershed, up from 204 sites three years ago. Many large sites are located in the upper watershed, in areas that were previously undeveloped. At least half of the sites in most watersheds are at least 5 acres or larger with some sites up to 1,000 acres in size.

The Construction General Permit was modified in 2001 by State Board Resolution No. 2001-046. The modifications require that a sampling and analysis strategy and sampling schedule for discharges from construction activity be developed and included in projects' Storm Water Pollution Prevention Plans. Additional information may be found on the Regional Board Storm Water website at http://www.waterboards.ca.gov/losangeles/html/programs/stormwater/sw_construction.html.

Monitoring and Assessment

California Water Code Section 13192 required the SWRCB to assess and report on the State monitoring programs and to prepare a proposal for a comprehensive surface water quality monitoring program. As currently envisioned, the Surface Water Ambient Monitoring Program (SWAMP) will be implemented using a scientifically sound monitoring design with meaningful indicators of the environment and the results will be readily available to the public. Ambient monitoring serves as a measure of the overall quality of water resources and the overall effectiveness of Regional Boards prevention, regulatory, and remedial actions.

The SWAMP is intended to meet four goals:

1) Identify specific problems preventing the SWRCB, RWQCBs, and the public from realizing beneficial uses in targeted watersheds.

2) Create an ambient monitoring program that addresses all hydrologic units of the State using consistent and objective monitoring, sampling and analysis methods; consistent data quality assurance protocols; and centralized data management.

3) Document ambient water quality conditions in potentially clean and polluted areas.

4) Provide the data to evaluate the effectiveness of water quality regulatory programs in protecting beneficial uses of waters of the State.

Each of the pre-existing SWRCB and RWQCBs existing monitoring programs (e.g., the State Mussel Watch Program, Toxic Substances Monitoring Program, Coastal Fish Contamination Program, and toxicity studies) have been incorporated into SWAMP to ensure a coordinated approach without duplication.

Two general approaches are outlined in the current proposal for implementing SWAMP. One focuses on identifying specific problems in targeted watersheds (directed monitoring) through sampling in areas suspected to be contaminated or sampling to evaluate the status of the most sensitive beneficial use (e.g., sample frequently-consumed fish). The overall goal is to establish site-specific information in sites known or suspected to have water quality problems. Collecting information on locations which may need listing or delisting of waters under CWA Section 303(d) is a focus. The other approach involves documenting ambient water quality conditions in potentially clean and polluted areas (ambient monitoring). The overall goals is to develop a Statewide picture of the status and trends of the quality of California's water resources. It is intended that this portion of SWAMP will be implemented in each hydrologic unit of the State at least one time every five years. This portion of SWAMP is focused on collecting information on waters for which the State presently has little information and to determine the effects of diffuse sources of pollution.

Our general approach to implementing the SWAMP will be to sample following the rotating watershed cycle. For example, in FY04-05 we would focus sampling in the Misc. Ventura Coastal and Channel Islands WMAs and Ventura River Watersheds which is targeted under the WMI that year. That way, each hydrologic unit in the Region would be sampled every five years. Possible exceptions to this approach include investigating reference sites in non-targeted as well as targeted watersheds and conducting followup work at problem sites.

We generally utilize a stratified random approach to evaluate the hydrologic units with targeted sampling at the base of tributaries and in the estuary. Targeted sampling may also occur in watersheds with extensive recent monitoring data to focus on data gaps; we may also utilize targeted sampling in very small watersheds.

There is currently about $253,000 available in FY04/05 for sampling and analysis due to recent budget cuts; this represents a reduction of about $100,000 from over the last three years. The majority of those resources are anticipated to be dedicated toward biological monitoring as opposed to chemical analyses. Biological monitoring may include freshwater toxicity tests, habitat assessments, analysis of benthic invertebrates, fish bioassessments, or sediment toxicity tests. Much of this work will be conducted through a master contract with the San Jose State Foundation.

Coastal Fish Contamination Program: Governor Wilson's Executive Order W-162-97 (issued October 8, 1997) required Cal/EPA to inventory existing ocean and coastal water quality monitoring programs and make recommendations for a comprehensive program for monitoring water quality and reducing pollution within coastal watersheds, bays, estuaries, lagoons and nearshore ocean waters. The State Water Resources Control Board was assigned the responsibility to implement this mandate (funded by AB 1581 and AB 1429). SB 753 required the SWRCB to establish a statewide monitoring program to assess human health risks associated with recreational fishing and seafood consumption. A screening study was initiated during 1999 to assess approximately ten sites and supplement the information already available for Santa Monica Bay. However, oceanic conditions associated with an El Nino event precluded adequate collection of fish samples during 1999, so the screening study was extended into 2000. Sampling during 2001 and 2002 was geared towards collecting additional data for areas where fish tissue contamination levels were high. The ultimate goal was to develop a regional (Region 4 coastline, not just Santa Monica Bay) sampling program, which would keep most of the original framework created by the Bay Restoration Project, but expand it throughout the region. An inventory of coastal water quality monitoring programs has been prepared for Southern California with the assistance of SCCWRP; it can be accessed at: http://www.sfei.org/camp. This program is now under the auspices of SWAMP.

State Mussel Watch/Toxic Substances Monitoring Programs (SMW/TSMP): Water column monitoring for toxic substances can be unreliable since toxic substances are often transported intermittently and can be missed with standard "grab" sampling of water. In addition, harmful levels of toxicants are often present in such low concentrations that detecting them can be difficult and expensive. In some cases, a more realistic and cost-effective approach is to test the flesh of fish and other aquatic organisms that bioaccumulate these compounds in their tissues and concentrate toxicants through the food web.

In 1977, two biomonitoring programs were initiated by State Board: the Toxic Substances Monitoring and State Mussel Watch Programs. The Los Angeles Region is active in both programs which are implemented jointly by the State Board and the California Department of Fish and Game. Tissue samples collected under the TSMP are usually fish but can also include benthic invertebrates. The tissue is analyzed for trace metals and synthetic organic chemicals. The fish are generally collected from inland fresh waters but are occasionally collected from estuaries. The SMWP provides similar documentation of the quality of coastal marine and estuarine waters. Mussels, which are sessile (attached) bivalve invertebrates, serve as indicator organisms and provide a localized measurement of water quality, as they accumulate trace metals and synthetic organic chemicals in their tissues. Mussels are generally transplanted into the test site from "clean" areas of the state (generally Bodega Bay) although occasionally local, "resident" mussels are collected. Other types of shellfish can be used at times and

sediments have, at times, been collected. The focus of TSMP sampling in the region has tended to be trend monitoring while the SMWP has been used more for "hot spot" identification although with lesser resources available in recent years, the SMWP has moved away from hot spot identification in favor of long-term trend monitoring at fewer sites in recent years. Data from these two programs have been critical in determining beneficial use impairments in coastal waters. While these programs are now under the auspices of SWAMP, their data may be found on the State Board's website at: http://www.waterboards.ca.gov/programs/smw/index.html.

Basin Planning

Water Quality Legislation

The Porter-Cologne Water Quality Control Act (California Water Code) was enacted by the State in 1969 and became effective January 1, 1970. This legislation authorizes the State Board to adopt, review, and revise policies for all waters of the state and directs the Regional Boards to develop regional Basin Plans.

The Clean Water Act (CWA), enacted by the federal government in 1972, was designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. One of the national goals states that wherever attainable, water quality should provide for the protection and propagation of fish, shellfish, and wildlife, and provide for recreation in and on the water (i.e., fishable, swimmable). The CWA directs states to establish water quality standards for all "waters of the United States" and review and update such standards on a triennial basis.

The USEPA has delegated responsibility for implementation of portions of the CWA to the State and Regional Boards, including water quality planning and control programs such as the National Pollutant Discharge Elimination System (NPDES).

Besides state and federal laws, several court decisions provide guidance for basin planning. One decision reaffirmed the public trust doctrine, holding that the public trust is "an affirmation of the duty of the state to protect the people's common heritage in streams, lakes, marshlands, and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust." Public trust encompasses uses of water for commerce, navigation, fisheries, and recreation.

Basin Plans

Regional Board Basin Plans are designed to preserve and enhance water quality and protect the beneficial uses of all regional waters by providing consistent long-term standards and program guidance for the Region. Specifically, Basin Plans (i) designate beneficial uses for surface and ground waters, (ii) set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and (iii) describe implementation programs to protect all waters in the Region. In addition, Basin Plan incorporate (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations.

As part of the State's Continuing Planning Process, components of Basin Plans are reviewed as new data and information become available or as specific needs arise. Comprehensive updates of Basin Plans

occur in response to state and federal legislative requirements and as funding becomes available. State Board and other governmental entities' (federal, state and local) plans, that can affect water quality, are incorporated into the planning process. Following adoption by Regional Boards, the Basin Plans and subsequent amendments are subject to approval by the State Board, the State Office of Administrative Law (OAL), and the United States Environmental Protection Agency (USEPA).

Basin Plan Amendments

Basin Plan amendments will be completed periodically as new standards, policies, and other information are developed. TMDLs will also be adopted as Basin Plan amendments. This will generate a significant workload for Standards/TMDL staff over the next 13 years. We also anticipate that watershed efforts utilized, in part, to accomplish TMDLs will identify other possibilities for Basin Plan studies and amendments (e.g., new or revised standards, new policies).

A Basin Plan amendment updating municipal and domestic water supply designations was brought to the Board for consideration in late 1998. In November 1998, the Regional Board voted to amend the Water Quality Control Plan for the Los Angeles Region (Basin Plan), by adopting a resolution to "Incorporate Changes in Beneficial Use Designations for Selected Waters." This amendment removed the beneficial use designation for "Municipal and Domestic Supply" (MUN) from eight surface waters and two ground water areas along the coast. The State Board voted to approve this amendment at the February 1999 Board hearing, however, in July 1999, the State Office of Administrative Law (OAL) issued a Notification of Disapproval due to a number of details including our responses to comments. The Regional Board resubmitted groundwater portion of the amendment, which was approved by OAL in 2000.

In 1990, the Regional Board adopted Resolution No. 90-004 (Drought Policy) which had a term of three years and provided interim relief to dischargers who experienced difficulty meeting chloride objectives because of a state-wide drought. The policy adjusted effluent limits to the lesser of 1) 250 mg/l or 2) the chloride concentration in the water supply plus 85 mg/l. In 1995, the Regional Board extended the interim limits for three years and directed staff to develop a long-term solution to deal with the impact of changing water supply, especially during droughts. In 1997, the Regional Board adopted Resolution No. 97-002 (Chloride Policy) which amended the Basin Plan by setting the chloride objective at 190 mg/l except in the Calleguas Creek and Santa Clara River Watersheds where, due to the great concern for protection of agriculture, staff were directed to determine the chloride concentrations sufficient to protect agricultural beneficial uses. The Chloride Policy has since been approved by the State Board and Office of Administrative Law (OAL).

Recent Basin Plan amendments may be found on the Regional Board's website at http://www.waterboards.ca.gov/losangeles/html/meetings/tmdl/Basin_plan/basin_plan_amendment_tmdl.htm.

Water Quality Objectives

The CWA (§303) requires states to develop water quality standards for all waters and to submit to the USEPA for approval all new or revised water quality standards are established for inland surface and ocean waters. Water quality standards consist of a combination of beneficial uses and water quality

objectives, as well as an antidegradation policy. Water quality objectives may be expressed as either numeric limits or a narrative statement.

In addition to the federal mandate, the California Water Code (§13241) specifies that each Regional Board shall establish water quality objectives. The Water Code defines water quality objectives as "the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Thus, water quality objectives are intended (i) to protect the public health and welfare and (ii) to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water. Water quality objectives are achieved through Waste Discharge Requirements and other programs. These objectives, when compared with future water quality data, also provide the basis for identifying trends toward degradation or enhancement of regional waters.

Triennial Review Process

The California Water Code, (§13240), directs the State and Regional Boards to periodically review and update Basin Plans. Furthermore, the CWA (§303 [c]) directs states to review water quality standards every three years (triennial review) and, as appropriate, modify and adopt new standards.

In the Triennial Review Process, basin planning issues are formally identified and ranked during the public hearing process. These and other modifications to the Basin Plan are implemented through Basin Plan amendments as described below. In addition, the Regional Board can amend the Basin Plan as needed. Such amendments need not coincide with the Triennial Review Process.

The 2001 triennial review identified a number of major regionwide basin planning priorities that could be accomplished if existing funding levels were maintained including: adoption of TMDLs as Basin Plan amendments, an update of the ammonia objective, an update of the REC1 bacteria objective (this undergoing State Board review), evaluation of proposals to change beneficial uses and change as deemed justified, review and revision of the chlorine residual objective, changes regarding application of effluent limits when MUN is potential, and an evaluation of regulatory alternatives to de-designating waters listed as with MUN as a potential use. Many of these issues were raised due to EPA recommendations, new legislation and court orders. Most of these activities have been accomplished. The 2004 Triennial Review Process is currently underway.

Waivers

Regional Boards may issue both categorical and individual waivers. In the case of categorical waivers, the Regional Board must approve and issue categorical waiver criteria either through adopting a specific resolution or Basin Plan amendment. Once a categorical waiver is approved by the Regional Board, Regional Board staff may be delegated the responsibility to review and approve categorical waivers. Four categorical waivers have been approved in the Region, as set forth in Resolution No. 53-5 (adopted in 1953). These are: septic tanks, swimming pool discharges, on-site drilling mud discharges from single oil wells, and discharges from private impoundments or lakes. Individual waivers are typically for construction or development projects that are short-term or one-time events.

Section 13269, Paragraph (a), of the Water Code states that certain Water Code provisions "may be waived" by a Regional Board for a specific discharge or a specific type of discharge "if the waiver is not

against the public interest." However, recent legislation (Senate Bill 390, amending Section 13269) requires that all waivers or waiver categories be evaluated and renewed every 5 years. The legislation stated that, initially, Regional Boards must evaluate and renew all waivers and waiver categories by January 1, 2003, otherwise they will automatically terminate. After this initial evaluation and renewal, Regional Boards must conduct on-going compliance monitoring and renew, every 5 years, all waivers and waiver categories. The evaluation of waivers requires an initial review of all waivers and waiver categories, as well as validation of the adequacy of waiver conditions through field sampling at a representative number of discharges granted waivers. Depending on the data generated from this exercise, the Regional Board may decide to renew the waiver category (based on the adequacy of waiver conditions and their observance), amend the conditions (based on their inadequacy as documented through field tests), or allow the waiver category to automatically terminate on 1/1/2003 (based on the documented impact on water quality). If the last option is chosen, the Regional Board will then have to determine how those discharges should be regulated—either through general WDRs or individual WDRs.

The septic tank waiver involved many complexities. The Regional Board issued waivers for residential onsite wastewater treatment systems (septic systems) in the early 1950's as Resolution Nos. 52-4 and 53-6. Through these waivers, the Regional Board delegated its septic system permitting responsibility to Los Angeles and Ventura Counties, among other local agencies with land use and planning powers. Recent legislation amending section 13269 of the CWC required that the Regional Board review its septic system waivers and either renew or terminate them by June 30, 2004. The Regional Board would need to issue general or individual WDRs for ongoing discharges in the event waivers were not renewed. The revised section also requires that the Regional Board enforce the waivers and renew and/or terminate them every five years.

According to section 13269 of the CWC and the Basin Plan, in order for the Regional Board to renew the waivers, they must find that discharges from residential septic systems pose a minimal threat to water quality. At the June 10, 2004 regular Board meeting, the Regional Board approved Resolution No. R4-008, adopting waivers and a template memorandum of understanding (MOU) for residential and certain de minimis commercial septic systems. The waivers were in effect for a period of 60 days in the unincorporated portion of the County of Los Angeles and the City of Malibu and 120 days in the remaining areas of the Region. Local agencies were required to enter MOUs with the Regional Board based on the template MOU in order for the waivers to be extended beyond these deadlines.

According to the template MOU, local agencies shall amend their municipal plumbing code and permitting program to be substantially equivalent to upcoming statewide standards for septic systems adopted pursuant to sections 13290 and 13291 of the California Water Code. The template MOU also requires local agencies to conduct an inventory of all septic systems under their jurisdiction and take additional interim measures to ensure that septic systems pose a minimal threat to water quality. The MOUs shall be reviewed every five years. The Regional Board adopted general WDRs on September 2, 2004 (Order No. R4-2004-0146) to issue to homeowners in cities without waivers.

As of October 18, 2004, the Regional Board has approved MOUs for the Counties of Los Angeles and Ventura, the City of Malibu, the City of Los Angeles, and several other cities in the County of Los Angeles. The Regional Board will continue to negotiate MOUs with the remaining cities, and will issue Order No. R4-2004-0146 in cities where there is no MOU and where residents apply for permits for new or repaired systems.

Water Quality Priorities

Our major water quality priorities as first described in the Introduction of this document are reiterated below. In addition to Regional Board-directed priorities, priorities are mandated by legislation, statute, regulation, State Board, Cal-EPA, USEPA, and from sheer need to protect, restore, or enhance water quality. A list of the highest of these collective priorities follows. These are not necessarily arranged in priority order; however, TMDL-related work is considered the highest statewide priority. These Board priorities are further highlighted in the watershed and region-wide sections as appropriate. Grant funding may aid in addressing some of these priorities, at least in part, while other of these priorities will need to remain within the sole purview of the Board's regulatory programs.

- **Alternative methods to demonstrate water quality improvement** – tie water quality improvement to beneficial use improvement as a preferred way to demonstrate effectiveness of grant projects that are multi-use or habitat restoration in nature.
- **Point sources** – controlling compounds which continue to cause instream toxicity and/or accumulate in sediments or biota.
- **Industrial discharges** – ensuring compliance with either individual or general permits.
- **New/re-development** – proactively addressing water quality issues through CEQA, 401 certifications, or stormwater permits – ensuring wet weather compliance with construction permits.
- Addressing the **regional salt management**/salt imbalance issue which is becoming increasingly critical in the region. Also, balancing this issue with the need to promote the use of reclaimed water.
- **Development, adoption, and implementation of TMDLs** is a high priority both regionally and statewide.
- **Municipal stormwater/urban runoff** – advancing stormwater and urban runoff programs through a variety of efforts. Current priorities include trash control and new development/re-development issues.
- **Watershed monitoring and assessment** – coordination of existing resources and participation in the Surface Water Ambient Monitoring Program. More use of bioassessment as a tool.
- **Water quality standards** program – although this is the cornerstone of all of our programs, it has been minimally funded for the last two decades. This is a critical need for our organization to address this deficiency as all of our other programs are dependent on this information (TMDLs, permitting, clean-ups).
- **Habitat loss/restoration** – even with strides in improving instream water quality, unless habitat is restored (riparian/wetlands, in particular), in many cases beneficial uses can not be fully restored.
- **Preservation of high quality habitats** – ensure maintenance of beneficial uses at these sites through support of low-impact development coupled with minimized/avoided hydromodification
- Priority **nonpoint source** efforts – several areas have been targeted for accelerated efforts including development of regional strategies to address agriculture, septic tanks, urban runoff, and marinas as contributors of nonpoint source pollution.
- **Toxic hot spots** (sediment) – many of the impairments in the Region, particularly in harbors, are related to contaminated sediments. While source reduction will decrease pollutant levels over time, remediation of these sediments will also be needed which will be a long-term project.
- **Beach closures** – other impairments in the Region are the result of elevated coliform levels or beach closures. Monitoring the water quality of recreational areas along the coast, identifying land uses or drainages which generate pathogens, and reducing pollution within these areas is a targeted activity.
- **Implementation of agricultural waiver** - reduce loadings from agriculture through implementation of agricultural waiver.
- **Reduce, reuse, and recycle water** – maximize water conservation in Region.

High Priority Projects, Activities, or Needs Identified for Specific Current Grant Programs

The following projects, activities, or needs have been identified as high priorities for current grant programs and fulfill one or more of our water quality priorities:

Table 3. Agriculture grants: Agricultural Water Quality Grant Program (AWQGP) and Clean Water Act Section 319(h) Funds

		Watersheds									
Project/Activity/Needs Type and Description		San Gabriel River	Los Angeles River	Santa Monica Bay	Ventura River	Calleguas Creek	Santa Clara River	Misc. Ventura Coastal	Dominguez Ch/Harbors	Los Cerritos/Alamitos Bay	Region-wide
Monitoring Projects (Prop 40)											
Implement Ag waiver monitoring program											B
Implement biological & toxicity monitoring						B	B				C
Quantify & Characterize crop or practice specific pollutant loading contributions (i.e. strawberries or nurseries)											B
Quantify & Characterize existing Agriculture MM											B
Investigate toxicity from Agriculture loading						A	A				C
Quantify & Characterize tile drains											C
Quantify & Characterize Sediment loading						A					B
Quantify & Characterize Nitrogen loading						A	A				C
Quantify & Characterize Irrigation Practices											C
Quantify & Characterize Pesticide Application Rates						B	B	B			B
Quantify & Characterize chlorpyrifos and diazinon loading						A	A				
Quantify & Characterize DDT, Chem A, and toxaphene loading						A	A				
Quantify & Characterize organics and/or metals loading					C	C					C
Quantify & Characterize salt loading						C					
Implementation Projects (Prop 50 & CWA 319)											
Implement TMDLs & projects supporting TMDLs											A
Implement Ag waiver BMP program											B
Implement Integrated Farm Management Plans											B
Implement Erosion and Sediment Control Management Measures*											A
Implement agricultural buffer BMPs					B	B	A	B			
Implement Nutrient Management Measures*						A	A	B			
Implement Pesticide Management Measures*											B
Implement chlorpyrifos and diazinon loading control measures						A	A				
Implement Integrated Pest Management Practices						A	A				B
Implement Irrigation Management Measures*											A
Implement salt loading control measures						C	C				
Water Conservation Management Measures											B
Implement Agriculture Management Measures Education/Outreach*											C

		Watersheds									
Project/Activity/Needs Type and Description		San Gabriel River	Los Angeles River	Santa Monica Bay	Ventura River	Calleguas Creek	Santa Clara River	Misc. Ventura Coastal	Dominguez Ch/Harbors	Los Cerritos/Alamitos Bay	Region-wide
Protection & enhancement of wildlife habitat											B
Develop non-point pollution control strategies (319)											C
Conduct activities to increase public awareness of nonpoint source pollution and the related solutions available											C
Implement Pollutant mapping on real time basis											C

C=highly ranked projects; B=higher ranked projects; A=highest ranked projects

*See the web sites below for more details on Agriculture Management Measures.
http://www.epa.gov/owow/nps/MMGI/Chapter2/index.html
http://www.nrcs.usda.gov/technical/ECS/agronomy/core4.pdf

Table 4. Water management grants: Proposition 50, Chapter 8, Integrated Regional Water Management Program (IRWMP) http://www.swrcb.ca.gov/funding/irwmgp/index.html

Project/Activity/Needs Type and Description	San Gabriel River	Los Angeles River	Santa Monica Bay	Ventura River	Calleguas Creek	Santa Clara River	Misc. Ventura Coastal	Dominguez Ch/Harbors	Los Cerritos/Alamitos Bay	Region-wide
Implement trash, bacteria, or nitrogen TMDLs for water quality improvement, and maintenance or restoration of beneficial uses	**X**	**X**	**X**		**X**	**X**	**X**	**X**		
Implement habitat preservation or restoration projects in the more undisturbed drainages/reaches of the Region to ensure support of identified beneficial uses										**X**

Potential Projects, Activities, or Needs to Meet Board Priorities or Otherwise Improve Water Quality

Table 5 below contains a cumulative list of activities, projects, or needs which we, or our stakeholders, see as ways to improve water quality and beneficial uses in the various watersheds (or region-wide). Those activities, projects, or needs most directly involved with our water quality priorities listed earlier are highlighted in **bold**; however, only a few of the items in this table are being supported for the two current grant programs – Agriculture and Water Management (see Tables ? and ? above). In general,

funding is available from a large variety of state and federal agencies as well as private groups and these should be utilized as fully as possible even when a proposal involves addressing one of our water quality priorities. Funding source requirements should be carefully researched to ensure a good match with potential projects. Consulting the California Watershed Funding Database at http://calwatershedfunds.org/ may be helpful.

Table 5. Our long-term, cumulative list of potential grant projects

Project/Activity/Needs Type and Description		San Gabriel River	Los Angeles River	Santa Monica Bay	Ventura River	Calleguas Creek	Santa Clara River	Misc. Ventura Coastal	Dominguez Ch/Harbors	Los Cerritos/Alamitos Bay	Region-wide
Implement BMPs/Improve Water Quality											
Nonpoint pollution control strategies:											**X**
Implement Irrigation Management Measures											**X**
Implement septic corrective measures			**X**	**X**				**X**			
Implement management measures to reduce NPS pollution in marinas				**X**				**X**	**X**		
Implement Erosion & Sediment Control Management Measures (natural/non-structural) to reduce erosion while increasing wildlife habitat				**X**	**X**	**X**	**X**	**X**			
Urban nonpoint pollution control:											**X**
Implement trash reduction BMPs		**X**	**X**	**X**							
Implement urban runoff reduction BMPs		**X**	**X**	**X**					**X**	**X**	
Manage urban runoff		**X**	**X**	**X**		**X**	**X**	**X**	**X**		
Agricultural nonpoint source control:		**X**	**X**	**X**	**X**	**X**	**X**	**X**			
Implement Ag waiver BMP program					**X**	**X**	**X**	**X**			
Implement Integrated Farm Management Plans					**X**	**X**	**X**	**X**			
Implement Nutrient Management Measures					**X**	**X**	**X**	**X**			
Implement agricultural buffer BMPs					**X**	**X**	**X**	**X**			
Implement Integrated Pest Management Practices						**X**	**X**				
Pesticide Management:											**X**
Implement chlorpyrifos & diazinon loading control measures						**X**	**X**				
Implement TMDLs & projects supporting TMDLs											**X**
Mitigate beach erosion							**X**				
Reroute Arrundell Barranca								**X**			
Manage horse corral runoff		**X**	**X**	**X**	**X**						
Manage golf course irrigation runoff			**X**			**X**				**X**	
Manage nursery runoff		**X**	**X**								
Implement mitigation measures for floodplain							**X**				

development											

Project/Activity/Needs Type and Description	San Gabriel River	Los Angeles River	Santa Monica Bay	Ventura River	Calleguas Creek	Santa Clara River	Misc. Ventura Coastal	Dominguez Ch/Harbors	Los Cerritos/Alamitos Bay	Region-wide
Habitat Restoration/ Beneficial Use Enhancement										
Restore pocket wetlands along highly altered waterways where there were historic wetlands	X	X						X	X	
Restoration impaired riparian and aquatic habitats (i.e. Malibu Lagoon, McGrath Lake, Topanga Lagoon, Ormond Beach area, Colorado Lagoon, Dominguez Ch. soft bottom)	X	X	X		X	X	X	X	X	
Restore river channels and habitat following impacts from mining	X					X				
Enhance/restore steelhead trout habitat			X	X		X				
Enhance the water's beneficial and recreational uses	X	X	X				X			
Assess loadings and impacts										
Evaluate impacts of antifouling paints and pump-outs in marinas			X					X	X	
Investigate loading contributions from septic systems			X			X	X			
Evaluate impacts from large-scale development in the upper river, and integration of sustainable land uses and landscape designs						X				
Identify conflicts between water supply and water quality in lower watershed						X				
Loading contributions from agricultural activities:					X	X				
Quantify & characterize nitrogen and salt loading contributions to ground and surface water					X	X				
Quantify & characterize historic pesticides loading					X	X				
Quantify & characterize chlorpyrifos & diazinon loading					X	X				
Quantify & characterize sediment loading					X					
Investigate toxicity from agriculture loading					X	X				
Quantify & characterize crop- or practice-specific pollutant loading contributions (i.e., strawberries or nurseries)	X	X	X	X	X	X	X	X		
Agricultural practices:										
Quantify & characterize irrigation practices										X
Quantify & characterize pesticide application rates					X	X	X			
Quantify & characterize tile drains					X					
Quantify & characterize existing Agriculture Management Measures										X

Project/Activity/Needs Type and Description	San Gabriel River	Los Angeles River	Santa Monica Bay	Ventura River	Calleguas Creek	Santa Clara River	Misc. Ventura Coastal	Dominguez Ch/Harbors	Los Cerritos/Alamitos Bay	Region-wide
Loading contributions from urban activities:										**X**
Investigate loading contributions from residential and urban activities					**X**	**X**	**X**			
Quantify & characterize organics and/or metals accumulation and loadings				**X**	**X**			**X**		
Evaluate and identify sources of urban runoff toxicity			**X**							
Prioritize storm drains needing diversion; focus efforts on major problem drains for coliform TMDL implementation	**X**		**X**							
Identify and evaluate opportunities to promote recovery and restoration of steelhead trout			**X**	**X**		**X**				
Develop sediment quality objectives								**X**		
Develop TMDLs										**X**
Investigate loading contributions from golf courses										**X**
Evaluate impacts of reservoir cleaning on water quality	**X**									
Evaluate impacts of reclaimed water on river/groundwater	**X**									
Evaluate impacts of urban runoff on isolated water bodies									**X**	
Evaluate impacts of loss of tidal exchange									**X**	
Evaluate peak storm water runoff discharge control to reduce erosion			**X**							
Assess the sustainability of key commercial species			**X**							
Assess the sustainability of key sportfishing species			**X**							
Assess fish contamination levels in entire Santa Monica Bay			**X**							
Investigate eutrophication in the Ventura Lagoon				**X**						
Investigate sedimentation in Mugu Lagoon					**X**					
Research-oriented studies										
Research management measures to reduce NPS pollution in marinas							**X**			
Evaluate which BMPs are most effective for the various industrial sectors										**X**
Study effectiveness of non-structural BMPs (public outreach)			**X**							
Evaluate design and performance standards for implementation of storm water BMPs										**X**
Analyze storm water quality data and trends from various industrial sectors (e.g. metal yards, waste management facilities, etc.)										**X**
Develop nonpoint pollution control strategies										**X**
Conduct hydrologic study of estuary and evaluation of resource mix	**X**				**X**					

Project/Activity/Needs Type and Description	San Gabriel River	Los Angeles River	Santa Monica Bay	Ventura River	Calleguas Creek	Santa Clara River	Misc. Ventura Coastal	Dominguez Ch/Harbors	Los Cerritos/Alamitos Bay	Region-wide
Research and develop indicators and a "report card" format										**X**
Develop practical sanitation survey tools			**X**							
Water Conservation and Management										
Mitigate groundwater overdraft						**X**	**X**			
Investigate nitrogen and salt loading contributions to ground and surface water					**X**	**X**				
Demonstrate water reuse projects to lower demand on supply										**X**
Identify conflicts between water supply and water quality in lower watershed						**X**				
Monitoring										
Implement a watershed wide monitoring program								**X**		
Implement biological & toxicity monitoring	**X**		**X**		**X**	**X**	**X**	**X**	**X**	
Implement ag waiver monitoring program										**X**
Implement citizen monitoring	**X**								**X**	
Education and Outreach										
Septic tank education/outreach			**X**				**X**			
Implement Agriculture Management Measures Education/Outreach					**X**	**X**	**X**			
Conduct activities to increase public awareness of nonpoint source pollution and the related solutions available										**X**
Implement watershed education and outreach										**X**
Watershed Planning										
Incorporate key IRWM standards into existing watershed plans or develop addendums										**X**
Finalize Integrate Regional Water Management Plans										**X**

Watersheds where projects/activities/needs to be addressed are of the greatest important *(independent of whether a water quality priority is being addressed)* are marked with an "X". We would prefer to fund the identified projects/activities/needs in these watersheds specifically. A project/activity/need which addresses one of our water quality priorities in one or more of the targeted watersheds would be ranked higher than projects not in a targeted watershed or not addressing a water quality priority.

Since many funding sources are now requiring proposed projects be consistent with watershed management, restoration, or other plans for the watershed (otherwise collectively identified here as "Watershed Restoration Action Strategies"), the table below list those we know about, whether final, draft, or in process.

Watershed Restoration Action Strategies in the Los Angeles Region

Watershed or Watershed Management Area	Watershed Restoration Action Strategies or Equivalent Documents (in process, draft, or final)
Los Angeles River Watershed	Los Angeles-San Gabriel Rivers Watershed Council. *The Los Angeles-San Gabriel Watershed, an Integrated Vision of the Future*, 1997. (Final) http://www.lasgrwc.org US Forest Service. *Forest Plan, Angeles National Forest*. (Draft) http://www.r5.fs.fed.us/sccs/forest_plans.htm San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy. *Guiding Principles Watershed and Open Space Plan* (Final) http://www.rmc.ca.gov/ Los Angeles County Department of Public Works. *Los Angeles River Master Plan*, 1996. (Final) *San Gabriel Valley Council of Governments. Rio Hondo Watershed Management Plan*, 2004 (Final) http://www.rmc.ca.gov/rio_hondo/rh_index.html *Compton Creek Watershed Management Plan* (in process) http://www.lasgrwc.org/ComptonCreekWMP.htm
Calleguas Creek Watershed	Natural Resources Conservation Service. *Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon*, 1995. (Final) Calleguas Creek Watershed Management Plan Committee. *Draft Calleguas Creek Watershed Management Plan* (draft) http://www.calleguas.com/ccbrochure/cc.htm David Magney Environmental Consulting. *Calleguas Creek Watershed Wetland Restoration Plan*, 2000. (Final) http://www.calleguas.com/ccbrochure/ccwrp.pdf
Santa Monica Bay WMA	Santa Monica Bay Restoration Project. *Santa Monica Bay Restoration Plan*, 1995. (Final) RCD of the Santa Monica Mountains. *Topanga Creek Watershed Management Plan*, 2002 (Final) http://www.topangaonline.com/twc/index.html Natural Resources Conservation Service. *Malibu Creek Watershed Natural Resources Plan*, 1995. (Final) Los Angeles County Department of Public Works. *Watershed Management Area Plan for the Malibu Creek Watershed* (Draft) Los Angeles County Department of Public Works. *Ballona Creek Watershed Management Plan*, 2004 (Final) http://www.ladpw.org/wmd/watershed/bc/
San Gabriel River Watershed	California Regional Water Quality Control Board, Los Angeles Region. *East Fork San Gabriel River Litter TMDL*, 1999. (Final) Los Angeles-San Gabriel Rivers Watershed Council. *The Los Angeles-San Gabriel Watershed, an Integrated Vision of the Future*, 1997. (Final) http://www.lasgrwc.org US Forest Service. *Forest Plan, Angeles National Forest*. (Update in process) http://www.r5.fs.fed.us/sccs/forest_plans.htm Los Angeles County Department of Public Works. *Draft San Gabriel River Master Plan* (draft) http://ladpw.org/wmd/watershed/sg/mp/ San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy. *Guiding Principles Watershed and Open Space Plan* (final) http://www.rmc.ca.gov/ *Upper San Gabriel River, Walnut Creek, and San Jose Creek Watershed Management Plan* (in process) http://www.sgmrc.org/watershed.html *Coyote Creek Watershed Management Plan* (in process)
Los Cerritos Channel/Alamitos Bay WMA	*Draft Colorado Lagoon Restoration Feasibility Study* (Draft). http://www.longbeach.gov/news/displaynews.asp?NewsID=561
Dominguez Channel WMA	Los Angeles County Department of Public Works. *Dominguez Channel Watershed Management Area Plan*, 2004. (Final) http://ladpw.org/wmd/watershed/dc City of LA Department of Recreation and Parks and Palos Verdes/South Bay Audubon Society. *Ken Malloy Harbor Regional Park Development Program. Volume I. Habitat Restoration and Lake Water Quality Improvement Design Development Report*, Prepared by Parsons. 2001. (Final)
Channel Islands WMA	Department of Navy. *San Clemente Island Integrated Natural Resources Management Plan*. 2002 (Final)

Watershed or Watershed Management Area	Watershed Restoration Action Strategies or Equivalent Documents (in process, draft, or final)
Santa Clara River Watershed	Santa Clara River Enhancement and Management Plan Steering Committee. *Draft Santa Clara River Enhancement and Management Plan.* (Draft) http://sdgis.amec.com/scremp/index.htm City of Santa Clarita. *Santa Clara River Corridor Plan.* (Final) US Forest Service. *Forest Plan, Los Padres National Forest*. (Update in process) http://www.r5.fs.fed.us/sccs/forest_plans.htm
Ventura River Watershed	Entrix, Inc. *Steelhead Trout Restoration and Recovery Plan*, 1997. (Final) US Forest Service. *Forest Plan, Los Padres National Forest*. (Update in process) http://www.r5.fs.fed.us/sccs/forest_plans.htm
Regionwide	California Regional Water Quality Control Board, Los Angeles Region. *Watershed Management Initiative Chapter*, 2004. (Final) http://www.waterboards.ca.gov/losangeles/html/programs/regional_programs.html California Regional Water Quality Control Board, Los Angeles Region. Adopted TMDLs. http://www.waterboards.ca.gov/losangeles/html/meetings/tmdl/tmdl.html
Regionwide, wetlands	Current fiscal year workplan adopted by Board of Governors of the Southern California Wetlands Recovery Project. (Final) http://www.coastalconservancy.ca.gov/scwrp/index.html

Wetlands Protection and Management

Wetlands acres in the Region have diminished greatly over the past several decades as coastal development, in particular, has increased. Wetlands provide habitat, serve to slow down water flow, decrease total volume through infiltration, and filter out a number of pollutants through active uptake by plants as well as deposition in sediments. Wetlands such as coastal estuaries are a buffer zone between ocean and inland water resources and are heavily utilized by aquatic organisms. Continuous stretches of riparian habitat function as wildlife corridors to allow animal movement between increasingly isolated populations. They also serve as popular recreational destinations for residents and visitors. Unfortunately, many of our Region's wetlands are impacted by varying kinds and amounts of pollutants and alterations.

Over the past 7 years, we have embarked on a number of efforts to inventory and evaluate our Region's wetlands. These efforts have included the following:

- We funded a 1993 study, entitled *Waterbodies, Wetlands, and their Beneficial Uses in the Los Angeles Region* which provides descriptions, maps, photos, and functional values of wetlands throughout the region.

- Our Santa Monica Bay Restoration Project funded a wetlands inventory in 1993 which outlines historical changes in wetlands in the Santa Monica watershed, an inventory of current wetlands in the watershed, and potential restoration and creation projects in the watershed.

- The Regional Board continues involvement in the Southern California Wetlands Recovery Project (WRP) which is a partnership of public agencies working cooperatively to acquire, restore, and enhance coastal wetlands and watersheds between Point Conception and the International border with Mexico. Using a non-regulatory approach and an ecosystem perspective, the WRP works to identify wetland acquisition and restoration priorities, prepare plans for these priority sites, pool funds to undertake these projects, implement priority plans, and oversee post-project maintenance

and monitoring. When compared to estimated historical acreages, Los Angeles County has lost 93% of its wetlands while Ventura County has lost 58% of its wetlands. Currently, the Project funds wetlands projects which involve planning, restoration, or acquisition. Some of the this region's wetlands given a high priority for funding include Los Cerritos Wetlands, Malibu Lagoon, Ormond Beach Wetlands, and the Ventura River estuary. More information about the Project may be found on its webpage at http://www.coastalconservancy.ca.gov/scwrp/index.html.

Water Quality Certification (401) Program

A key wetlands regulatory tool for the Regional Board is the CWA Section 401 Water Quality Certification Program which regulates discharges of dredge and fill materials to waters. The 401 certification program is one of the most effective tools the state has for regulating hydrologic modification projects, especially those which directly impact the region's diminishing acres of wetlands and riparian habitat. Program work is conducted in conjunction with U.S. Army Corps of Engineers and the California Department of Fish & Game.

Key program activities should include CEQA documents review/response (possibly involvement as lead agency), pre-construction meetings with applicants, site visits, application processing, follow-up monitoring and inspections, and enforcement. Unfortunately, the program is currently severely underfunded with only application processing being undertaken. Any incremental increases in the baseline PYs would go first toward follow-up work and enforcement, then toward increased support of application processing, then coordination meetings, site visits, and CEQA documents review/response. Follow-up work is especially critical since mitigation wetlands often do not function as well as projected during the planning phase. Another very important activity that could be funded is the development of policies regarding in-stream gravel mining and use of in-stream sediment basins.

Furthermore, beginning in FY00/01, the program began requiring in-house certification rather than sign-off by State Board. This has resulted in more detailed review of all projects, even those which would previously have been given less attention (those with little likelihood of producing impacts) with less time then being available for large projects likely to produce impacts. Another program change which occurred during FY00/01 was allowing third-party petitions of certification decisions; previously, only the applicant was allowed to do this. This leads to potentially needing to divert scarce resources from application processing to litigation work.

Approximately 150-200 applications are processed each year. Information about projects and the program in general is available on the Regional Board website at http://www.waterboards.ca.gov/losangeles/html/meetings/401wqc.html. Additional information may be found on the State Board website at http://www.waterboards.ca.gov/cwa401/index.html

The Regional Board applied for and received USEPA wetlands protection grant funding under CWA Section 104(b)(3) for federal fiscal year 2002. We requested funds from USEPA to conduct a two-year study to access the effectiveness of wetlands mitigation conducted through the 401 certification program. Funds were awarded during summer 2002 and this project is nearing completion.

Management of Nonpoint Source Pollution

Background

Management of NPS pollution is based upon the requirements of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act, Division 7 of the California Water Code, establishes a comprehensive program for the protection of water quality and beneficial uses of the State's waters and makes explicitly clear the law applies to nonpoint as well as point source discharges. The implementation portion of this comprehensive program should provide for the attainment of water quality standards. The Porter-Cologne Act also establishes the administrative permitting authority—in the form of Waste Discharge Requirements (WDRs), waivers of WDRs or basin plan prohibitions—to be used to control NPS discharges. Additional legislative requirements state that all waivers must be conditional, they are to be re-evaluated and subsequently reissued every five years, and the RWQCBs must require compliance with waiver conditions.

California's Nonpoint Source (NPS) Pollution Control Program has been in effect since 1988 and was updated in 2000. In August 2004 the Office of Administrative Law approved the NPS Policy. The policy supersedes certain elements of the NPS Program Plan and formally eliminates the "three-tiered approach" in informal use.

The two primary federal statutes that establish a framework for addressing nonpoint source pollution in this Region are **Clean Water Act (CWA) Section 319** and the **Coastal Zone Act Reauthorization Amendments (CZARA) of 1990 Section 6217**. Together these statutes encourage states to assess water quality problems associated with nonpoint sources of pollution and to develop programs to control these sources.

- CWA Section 319 requires that, in order to be eligible for federal funding, states develop an assessment report detailing the extent of nonpoint source pollution, and a management program specifying nonpoint source controls.

- CZARA Section 6217(a) requires the state to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters; establish coastal nonpoint source programs.

These programs will be implemented through changes to the state's current nonpoint source control program approved by USEPA under CWA Section 319 and through changes to the state's coastal zone management program (implemented in this state by the California Coastal Commission) approved by NOAA under Coastal Zone Management Act Section 306.

Under CZARA, California must (1) provide for the implementation of management measures that are in conformity with the USEPA *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (1993) and (2) provide a process for developing and revising management measures to be applied in critical coastal areas and in areas where necessary to attain and maintain water quality standards.

Management measures are defined in CZARA as: "economically achievable measures to control the addition of pollutants from existing and new categories and classes of nonpoint sources of pollution,

which reflect the greatest degree of pollution reduction achievable through application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other available alternatives." Mechanisms for implementation of these management measures may include, for example, permit programs, zoning, enforceable water quality standards, and general environmental laws and prohibitions by which a state exerts control over private and public lands and water uses and natural resources in the coastal zone (including those which may be implemented by agencies other than the State Water Resources Control Board and the California Coastal Commission). States may also use voluntary approaches like economic incentives if they are backed by appropriate regulations.

The State's updated nonpoint source management plan includes a 5-year implementation plan as well as a longer-term 15-year implementation strategy. The plan was adopted by USEPA and NOAA in July 2000. Implementation of the plan will entail the use of considerable resources at the Regional Board level. Documents relating to this plan may be found at http://www.waterboards.ca.gov/nps/protecting.html.

The Plan for California's Nonpoint Source Pollution Control Program includes requirements for Critical Coastal Area (CCA) designation. The intent of CCA designation is to direct needed attention to coastal areas of special biological, social, and environmental significance and to provide an impetus for these areas to receive special support and resources. The goal was to identify areas of the coast that are adjacent to coastal water bodies impacted by nonpoint source pollution, or adjacent to high quality waters threatened but not yet impacted by nonpoint source pollution.

While it is clear nonpoint sources of pollution are difficult to manage, the state's current nonpoint source management plan approach which can be tailored to the particular situation:

- Regulatory-based encouragement of management practices (MPs), may occur when voluntary implementation is lacking. Encouragement may be effected through Regional Board waiving of waste discharge requirements if compliance with MPs occurs. Or, MPs may be enforced indirectly by entering into management agency agreements (MAAs) with agencies which have the authority to enforce. These MAAs would reference the specific MPs to be used and the means of implementation.

- The Regional Board can adopt and enforce requirements on any waste discharge including those from nonpoint sources. This involves prescribing effluent limitations which would in turn require implementation of MPs in order to insure compliance.

Specific nonpoint source issues and implementation activities relative to individual watersheds are described in the appropriate watershed section while a general outline of our approach in addressing nonpoint pollution follows.

Our Approach

The State's Nonpoint Source Management Plan puts an emphasis on prioritization of nonpoint source categories as well as those waters impacted by nonpoint source pollution. It also states that management activities and implementation schedules needs are to be identified (e.g. monitoring for source identification, education, training, regulation, interagency agreements, and employment of MPs). As is discussed elsewhere, many of these activities are severely underfunded. However, with that in mind, the

following presents this Region's goals and objectives for the implementation of the State's Nonpoint Source Management Plan. Program objectives which apply most specifically to particular watersheds are highlighted and enlarged upon in the appropriate watershed section, as appropriate. The following program objectives will serve as a basis for workplan development; the final list of tasks will be dependent on the level of funding.

Nonpoint Source Program Goals

Long-term Program Goal: improve water quality by implementing the management measures identified in the California Management Measures for Polluted Runoff Report (CAMMPR) by 2013

- Facilitate implementation of watershed management plans for prevention and control of nonpoint source pollution throughout the Region
- Expand our nonpoint source pollution control efforts in the Region
- Encourage more implementation of management measures in targeted watersheds
- Track implementation of management practices

Nonpoint Source Program Objectives

1) Program management – We shall oversee implementation of the Nonpoint Source Program in this Region through a variety of activities including fulfilling reporting requirements for the program, attending nonpoint source program roundtable meetings, and preparing and tracking annual workplan tasks. *Funded*

2) Contract management - In order to encourage planning and implementation of appropriate management measures, we shall explore funding opportunities and assume responsibility for administering and tracking contracts through which federal and state funds can be directed toward finding solutions to nonpoint source problems. Table 3 identifies our high priority projects for funding through the various grant programs. *Partially Funded*

3) Establishment of regional and/or watershed strategies – We intend to focus on developing regional (and where appropriate, watershed-specific) strategies to address nonpoint source pollution from agriculture (including investigation of use of nutrients, pesticides, and irrigation return water at large farming operations, nurseries and horse stables), urban (specifically new and existing development, golf courses and septic tanks, the latter will be focused on densely populated communities and areas where ground water is a source of drinking water), marinas and hydromodifications. *Partially funded*

4) Increase coordination of nonpoint source program with TMDLs through identification and reporting on the primary sources of nonpoint source pollutants with associated loadings; increase coordination of the nonpoint source program with the WMI. *Partially funded*

5) Identify and prioritize management measures to control NPS activities and promote implementation of these specific management measures to reduce or eliminate nonpoint source pollution problems throughout the Region (see Table 6 for summary of Regional NPS Problems by Management Measure Category). *Partially funded*

- For **agriculture**, high priority NPS/CZARA Management Measures include: a) for **traditional agriculture**, erosion and sediment control, nutrient management, pesticide management, irrigation water management, and education/outreach; for **horse stables**, management of wastewater and runoff from confined animal facilities, grazing management, and education/outreach; for **nurseries**, nutrient management, pesticide management, irrigation water management, and education/outreach.

- For **urban**, high priority NPS/CZARA Management Measures include: a) watershed protection and runoff from new and existing development, b) for **septic systems** new and operating onsite disposal systems, and c) for **golf courses** pollution prevention/education.

- For **marinas**, medium priority NPS/CZARA Management Measures include: control of solid wastes, fish wastes, liquid material, and petroleum; boat cleaning and maintenance; maintenance of sewage facilities; and public education.

- For **hydromodification management**, low-medium priority NPS/CZARA Management Measures include: channelization and channel modification; streambank and shoreline erosion control; and education/outreach.

- For **wetlands, riparian areas & vegetated treatment systems**, low-medium priority NPS/CZARA Management Measures include protection of wetlands and riparian areas, restoration of wetlands and riparian areas, and education/outreach.

6) Increase participation in public outreach and education activities through technology transfer, public presentations and preparation of education packages. We will participate on technical advisory committees, regional workshops, and agency meetings to promote implementation of nonpoint source management measures through. *Partially funded*

TABLE 6. REGIONAL NPS* PROBLEMS BY MANAGEMENT MEASURE CATEGORY

	Pollutants impairing or threatening Beneficial Uses arranged by Management Measure Category					
Watershed	Agriculture	Silviculture	Urban	Marinas & Recreational Boating	Hydromodifi- cation	Wetlands & Vegetated Treatment Systems
Calleguas Creek Watershed	nitrogen sediment toxicity siltation toxicity salts selenium historic pesticides chlorpyrifos		nitrogen sediment toxicity siltation toxicity mercury other metals historic pesticides chlorpyrifos PCBs trash		siltation	
Los Angeles River Watershed	nitrogen chlorpyrifos historic pest.		nitrogen chlorpyrifos historic pest. trash selenium other metals coliform PCBs oil VOCs			
Miscellaneous Ventura Coastal Waters WMA	sediment toxicity historic pesticides		sediment toxicity historic pesticides Coliform PCBs PAHs metals	Coliform PCBs PAHs metals TBT		
Santa Clara River Watershed	historic pesticides nitrogen salts		historic pesticides nitrogen coliform trash			
San Gabriel River Watershed	nitrogen coliform toxicity		nitrogen coliform toxicity PCBs trash arsenic mercury other metals chloride abnormal fish histology			

* Problems may be partially or fully due to NPS. Point sources may also be contributing to the problem.

TABLE 6. REGIONAL NPS* PROBLEMS BY MANAGEMENT MEASURE CATEGORY (cont'd)

	Pollutants impairing or threatening Beneficial Uses arranged by Management Measure Category					
Watershed	Agriculture	Silviculture	Urban	Marinas & Recreational Boating	Hydromodifi-cation	Wetlands & Vegetated Treatment Systems
Santa Monica Bay WMA	coliform nitrogen		coliform nitrogen PCBs sediment toxicity benthic comm. effects toxicity PAHs arsenic mercury other metals hist. pesticides trash fish consumption advisory debris salts	coliform metals PCBs sediment toxicity benthic comm. effects toxicity PAHs TBT	exotic vegetation habitat alteration hydromodification reduced tidal flushing	reduced tidal flushing exotic vegetation
Dominguez Channel and LA/LB Harbors WMA			coliform sediment toxicity benthic comm. effects PCBs historic pesticides PAHs metals nitrogen trash	coliform sediment toxicity benthic comm. effects PCBs historic pesticides PAHs metals TBT		
Los Cerritos Channel and Alamitos Bay WMA			historic pesticides PCBs sediment toxicity PAHs metals nitrogen coliform			
Ventura River Watershed	eutroph. DDT selenium		eutroph. metals trash		diversions	Diversions

* Problems may be partially or fully due to NPS. Point sources may also be contributing to the problem.

Regional Board Enforcement Strategy

The statewide Water Quality Enforcement Policy adopted by State Board in 1996 and revised again in 2002 is intended to make all enforcement consistent, predictable, and fair throughout the state. On March 3, 1997, the Regional Board adopted Resolution No. 97-005 which confirmed the Board's desire to carry out enforcement in a manner consistent with State Board's enforcement policy and that Regional Board staff prepare a regional enforcement strategy consistent with State Board's enforcement policy. The Resolution directed staff to implement the Regional Enforcement Strategy.

The statewide Water Quality Enforcement Policy upon which the Region Board Enforcement Strategy is based states that "(v)iolations of Waste Discharge Requirements (WDRs) or applicable statutory or regulatory requirements should result in a prompt enforcement response against the discharger. At a minimum, the Regional Board staff must bring the following to the attention of their Regional Board for possible enforcement action:" effluent limit violations/other permit violations - major dischargers; effluent limit violations/other permit violations - other NPDES/WDR dischargers; toxicity violations - all NPDES dischargers; violations of compliance schedules and enforcement orders - all dischargers; failure to submit reports/deficient reports (excluding stormwater); violations of POTW pretreatment programs; stormwater permit violations/deficiencies/failure to submit reports; other violations and enforcement actions; and spills (generally, non-permittees).

Priority violations include: all NPDES violations that the United States Environmental Protection Agency (USEPA) requires to be reported on the Quarterly Non-Compliance Report (QNCR) for the purpose of tracking significant non-compliance; all violations subject to mandatory minimum penalties pursuant to California Water Code section 13385; and other violations that the SWRCB and/or RWQCB considers to be significant and therefore high priority. Depending on the circumstances, violations that are not included on this list could nonetheless be considered “priority” as well. A copy of the Policy may be found at http://www.waterboards/plnspols/wqep.doc

Board staff are also involved in a number of interagency environmental task/strike forces including the U.S.EPA Environmental Strike Force, Los Angeles County Strike Force, Ventura County Strike Force, and Santa Monica Mountains Task Force.

Data Management And GIS

The State Water Information Management system (SWIM) is an organizational-wide database that was designed to facilitate electronic reporting, tracking, and analysis of regional data and information. The two modules that have been developed so far have incorporated the core structure of the Waste Discharger System (WDS) and information for the Underground Investigations (UGI). The modular structure of the database allows inclusion of new programs without redesigning the data model. WDS has now been shut down and converted statewide to SWIM. We continue to develop and pilot new models and tools. Currently under development is a query by address tool, expanded ad-hoc query tool, and environmental data entry and retrieval tools.

SWIM now tracks information on permits, both NPDES and non-NPDES. This module expands the old database in several ways. We can now record the permit limits and can perform compliance checking of electronic data against these limits. Data submitted electronically are also available for evaluation by

region or watershed or through a number of other filters. Data is also available for historic permits. Previously only data from the current fiscal year was online.

The Underground Investigations (UGI) module is a replacement for Region 4's Well Investigation Program (WIP) database. This module tracks the progress of WIP facilities, and provides reports to USEPA. This module could be expanded to track the progress of facilities in other programs such as Above Ground Tanks, Department of Defense, or Spills, Leaks, Investigation, and Cleanup should the need arise. This module could also be expanded to evaluate groundwater treatment methods, to track contaminants spatially, and to tie into Region 4's geographic information system (GIS).

Over time, we expect to expand the capabilities of the system, by 1) adding new components to the system, 2) linking the data to geographic layers, 3) linking our system with others such as USEPA and 4) providing access by the public to certain information.

Specific needs include:

- A tool to search the entire database by address (currently under development)
- GIS connectivity with our database, to allow analysis of data using our GIS. This would facilitate watershed management
- Update coordinate fields in SWIM (to develop coverages, such as facility and sampling locations)
- Obtain additional GIS coverages
- Develop coverages to be available on the internet
- Develop a catalog of available maps
- Add a module to track 401 Certification application tracking and compliance
- Add a module to track CEQA documents
- Develop tools to perform TMDL analysis
- Internet connectivity, to allow the dischargers, other agencies, and the public to query the database
- A module to facilitate the input and storage of volunteer monitoring data
- Ability to scan in permits and reports and make them available electronically over the LAN and the internet
- Input information from other programs, such as SLIC, DOD and Underground Tanks
- Insure data compatibility with Southern California Coastal Water Research Project (SCCWRP) data

Other Region-wide Activities

Other activities may be undertaken at odd intervals during the watershed cycle. These include, among others, processing applications for new permits, reviewing CEQA and NEPA documents, reviewing and commenting on requests for Section 401 water quality certification, landfill regulation, site (including DOD/DOE) cleanups, well investigation program activities, leaking underground storage tank cleanups, routine public outreach, and responding to spills, complaints (unrelated to permits), and special requests from the Regional Board. Some of the other region-wide strategies and programs the Regional Board implements are described in more detail below.

BEACHES/COASTAL WATERSHED ACTIVITIES

This Region's coastal resources support many of our most valuable beneficial uses. Our beaches, from Ventura through Zuma, Malibu, Venice and Long Beach are world-renowned. The Region's coastal estuaries, dunes, and wetlands are nearly gone and what is left are highly degraded. These resources, while inherently valuable as natural resources, also have a high economic value to the State with many

vacationers naming beaches and lakes as their prime vacation destination. These beaches and coastal resources are a huge tourist dollar generator.

Concurrently, our Region's ports and marinas are support valuable beneficial uses providing important avenues of trade as well as recreational boating opportunities and marine habitat. They too are impacted by the need to dredge and dispose of sediments often contaminated by upstream watershed sources.

It is clear the impacts to beaches, bays, coastal wetlands and estuaries, and near shore waters is especially critical to address from both an economic and ecological perspective. The Regional Board is focussing on protecting these resources through a combination of integrated coastal planning with an aggressive effort to assess and control watershed loadings of key pollutants - pathogens, trash and sediment (particularly contaminated) - which continue to degrade coastal areas and increase the costs of dredging. Also part of this effort will be a WEBsite which will provide access to "realtime" pathogen data for our beaches. These efforts are described in greater detail under individual watersheds. As funding is located for these issues, they will be coordinated Beaches/Coastal Watersheds activities. Specific elements that have funding are described below.

Contaminated Sediment Long-term Management Strategy

The Los Angeles County's coastline includes two of the nation's largest commercial ports and several major marina complexes and small-vessel harbors. Maintenance of authorized depths in existing channels and berthing areas and expansion and modernization of ports, harbors, and marinas, requires periodic dredging in virtually all of these facilities. Some of the sediments dredged from these harbors contain elevated levels of heavy metals, pesticides, and other contaminants. In most cases, the concentrations of these contaminants do not approach hazardous levels. However, the sediments contain enough contaminants that they are not suitable for unconfined ocean disposal. Additionally, the State's Bay Protection and Toxic Cleanup Program has identified bays and estuaries containing areas with contaminated sediments. Remediation of these sites may require dredging and disposal of this material. Disposal of any contaminated dredged materials requires special management, such as placement in a confined aquatic disposal site, capping, or disposal in an upland site. Additionally, some ports and harbors have considered other management techniques, such as treatment and beneficial re-use.

The ports and harbors have at times delayed or canceled dredging projects because of contaminated sediment issues. The regulatory agencies were evaluating disposal options for these projects on a case-by-case basis without the benefit of a regional perspective on management alternatives, cumulative impacts, and long-term solutions to prevent re-contamination of sediment. This approach has led to public concern over the ecological and human health implications of contaminated dredged material disposal. To resolve these issues, the regulatory and resource agencies, ports and harbors, environmental groups, and other interested parties agreed to establish a task force. The mission of the **Contaminated Sediment Task Force** (CSTF) is to prepare a Contaminated Sediment Long-Term Management Strategy (Strategy) for the Los Angeles region (limited to Los Angeles County). Past projects suggest that the major sources of contaminated dredge material will continue to be Marina del Rey Harbor, the ports of Los Angeles and Long Beach, and the mouth of the Los Angeles River.

The members of the CSTF agreed that the Strategy will consider confined aquatic and upland disposal, sediment treatment, beneficial re-use, other management techniques, and contamination source control. The CSTF agreed on a number of goals including identifying the scope of the contaminated sediment

problem, an analysis of management and disposal alternatives, development of a unified regulatory approach, and identify inputs of contaminants to coastal waters and ongoing regional efforts to reduce such inputs with a view towards promoting efforts that would reduce the inflow of contaminants. Initially, the CSTF will work with existing watershed management programs.

The CSTF was established through a Memorandum of Understanding (MOU) among the state and federal agencies with regulatory jurisdiction over dredging and disposal activities, as identified by SB 673, and other agencies representing ports, harbors, and marinas. The following agencies are signatory to that MOU: U.S. Army Corps of Engineers; U.S. Environmental Protection Agency; California Coastal Commission; Regional Water Quality Control Board, Los Angeles Region; County of Los Angeles Department of Beaches and Harbors; City of Long Beach; Port of Long Beach; and Port of Los Angeles.

The CSTF is carrying out its operation by two main committees (Executive and Management Committees), and five strategy development committees (Watershed Management and Source Reduction, Aquatic Disposal and Dredging Operations, Upland and Beneficial Re-use, Sediment Screening Thresholds, and Implementation Committees). The membership of the Management Committee includes those parties that signed the MOU and one organization selected to represent the environmental community (Heal the Bay). This committee is the main decision-making group with the CSTF. The Executive Committee consists of the chief executives of the four major agencies that regulate and manage dredging and disposal in Southern California. This committee will facilitate final agency concurrence, adoption, and implementation of the completed strategy. The strategy development committees will develop specific elements of the long-term management plan.

The CSTF has developed and is implementing an Interim Dredge Material Management Plan and is required to complete the Contaminated Sediment Long-Term Management Strategy by January 1, 2005. The program is funded at the Regional Board and the Coastal Commission at 1 PY each per year over a five-year time period. The CSTF received $2,033,000 from the legislature to conduct studies to answer specific questions and fill data gaps necessary to allow completion of the long-term management plan.

The CSTF has a web site which may be consulted for additional information: http://www.coastal.ca.gov/sediment/sdindex.html.

Regional Monitoring of Ocean Waters

The Southern California Bight Pilot Project conducted a survey in 1994 to assess the spatial extent and magnitude of ecological disturbances on the mainland shelf between Point Conception in Central California to the California-Mexico border. The survey was a cooperative effort between four large discharger agencies (City of Los Angeles, County Sanitation Districts of Los Angeles County, Orange County Sanitation District, and City of San Diego), regulators (U.S. Environmental Protection Agency, State Water Resources Control Board, and Los Angeles, Santa Ana, and San Diego Regional Water Quality Control Boards), as well as the Southern California Coastal Water Research Project, and the Santa Monica Bay Restoration Project. Monitoring focused on benthic infauna, sediment chemistry, sediment toxicity, demersal fish/invertebrate populations (trawling), water quality (CTD measurements), and bioaccumulation (fish tissue with species not consumed by humans). Final reports were published in 1998.

The Santa Monica Bay Restoration Project has developed a conceptual framework for ecosystem monitoring within Santa Monica Bay. Some components of this framework are being utilized. In 1995, a regional sampling program was implemented for bacteriological monitoring at shoreline and inshore stations with high recreational use within the bay (a cooperative effort by City of Los Angeles, County Sanitation Districts of Los Angeles County, and Los Angeles County Department of Health Services).

Work on a regional sampling program to assess the loadings of contaminants entering the bay is also continuing. In the meantime, the Southern California Coastal Water Research Project (SCWRP) is working on a model POTW monitoring program for the four largest southern California dischargers (City of Los Angeles, Los Angeles County Sanitation Districts, Orange County Sanitation District, and City of San Diego). The final report containing recommendations for the design of monitoring programs for major ocean dischargers has been prepared.

A second regional survey of the Southern California Bight was conducted in 1998. Rather than simply repeating the 1994 survey, the participants in the 1998 survey agreed to expand the monitoring program to include a larger geographic scope (including enclosed bays, harbors and estuaries, the Mexican coastline south of California, and offshore channel islands), new monitoring components (microbiology, greater emphasis on stormwater runoff impacts) and additional participants (small point source dischargers, stormwater groups and other interested parties, including volunteer monitoring programs being implemented by environmental organizations). Most of the sampling occurred over a six-week period from late July to early September, although certain components (water quality, microbiology) were performed during different time periods. Sampling of benthic infauna and sediment chemistry took place at approximately 250 stations, sediment toxicity at approximately 200 stations, and demersal fish/invertebrate populations and bioaccumulation at approximately 175 stations. The microbiology sampling was conducted at approximately 250 stations once per week over a 5-week period in August-September 1998 (dry season) and February-March 1999 (wet season). The water quality component included sampling once during dry weather (September-October) and twice during wet weather along several transect lines throughout the Bight.

As the monitoring data becomes available, it will be analyzed and discussed by the subcommittees and Steering Committee of the Bight'98 project, which include representatives from the participating agencies. Final reports are published as the data analysis is completed. The final reports for the microbiology and toxicity studies have been released; other reports should come out in 2002 (e.g., water quality, demersal fish/macroinvertebrate abundance, sediment chemistry, benthic infaunal communities and bioaccumulation) due to the longer time period required to analyze these types of samples. A third regional survey was conducted in 2003. More information about the Bight and other related projects may be found on the SCWRP webpage http://www.sccwrp.org/.

USEPA's Environmental Monitoring and Assessment Program (EMAP) first visited the Bight to conduct regional monitoring in 1994, contributing to the funding of the Southern California Bight Pilot Project. However, EMAP was unable to provide funding for the Bight'98 survey. Planning should begin soon to conduct another bight-wide regional survey in 2003 and EMAP is planning to participate in this effort.

Other Regional Monitoring Programs (BPCTP)

Bay Protection and Toxic Cleanup Program (BPTCP): In 1989, state legislation added Sections 13390 through 13396 to the California Water Code which established the BPTCP. The program has four main

goals: 1) to provide protection of existing and future beneficial uses of bays and estuarine waters, 2) to identify and characterize toxic hot spots, 3) to plan for cleanup or other mitigating actions of toxic hot spots, and 4) to develop effective strategies to control toxic pollutants, abate existing sources of toxicity, and prevent new sources of toxicity.

While in its identification and characterization phase, the program implemented regional monitoring at each of the coastal Regions. Sediment toxicity tests, chemical analyses, and benthic community surveys were used to classify each bay or estuarine waterbody. Waters were generally "pre-screened" for contamination using toxicity tests; if enough was found, more intensive monitoring followed to confirm the existence and spatial extent of monitoring. Using this approach, the Santa Monica Bay/Palos Verdes Shelf, parts of, Consolidated Slip/Dominguez Channel, Cabrillo Pier, Mugu Lagoon/Calleguas Creek, McGrath Lake, Los Angeles River Estuary, Marina Del Rey, and Marina Del Rey Entrance Channel were identified as candidate toxic hot spots. A number of other waters were identified as sites of concern.

State Board adopted a statewide, consolidated cleanup plan in June 1999 with Office of Administrative approval following in November 1999. Regional cleanup plans deal specifically with high priority candidate toxic hot spots; detailed cleanup plans were not required for moderate priority candidate toxic hot spots or sites of concern although listed in the document. Identified remediation/cleanup alternatives for toxic hot spots range from specific actions such as in-situ capping, issuing waste discharge requirements, or dredging to more regional/watershed activities such as long-term management of contaminated sediments or proactive application of the watershed management approach as a preventive measure. At this point, no specific funding source has been identified to pay for remediation activities although potential funding mechanisms are addressed in the statewide consolidated cleanup plan. The best chance for obtaining funds for cleanup appears to be through the use of Supplemental Environmental Projects (SEPs) from enforcement actions or by partnering with other groups within the context of the watershed management approach to take advantage of local efforts. Funding for staff resources ended in June 1999.

After the Consolidated Plan was approved, the Regional Board was required to reevaluate WDRs in compliance with Water Code Section 13395. The reevaluation was to consist of (1) an assessment of the WDRs that may influence the creation or further pollution of the known toxic hot spot; (2) an assessment of which WDRs need to be modified to improve environmental conditions at the known toxic hot spot; and (3) a schedule for completion of any WDR modifications deemed appropriate. We evaluated WDRs associated with high priority known toxic hot spots (i.e., Palos Verdes Shelf, Consolidated Slip, Cabrillo Beach, Mugu Lagoon, McGrath Lake)and did not identify any existing WDRs which required modifications Similarly, we did not need to modify any WDRs associated with moderate and low priority known toxic hot spots. As we renew, modify or issue new WDRs, we need to include a finding that the discharge may contribute to the pollution present at the toxic hot spot.

The program also has a website which may be consulted for additional information: http://www.waterboards.ca.gov/bptcp.

TMDL Scheduling And Development

The 303(d)-listed waterbodies/reaches were listed in the watershed sections. The TMDLs scheduled in the near-term were also listed. Clearly, there are a large number of waters in the Region which are impaired by a number of constituents (764 individual impairments were listed in the submittal to State

Board). All TMDLs must be completed by 2011 (as requested by U.S. EPA and State Board and per a consent decree). The overriding problem associated with TMDL development needs to be reiterated here, namely, staff resources at the Regional Board to either directly conduct or be involved in stakeholder-led TMDL investigations and in general stay dedicated to nonpoint source activities are still minimal. **In general, depending on the watershed, it is anticipated that 0.5 -2.0 PYs/watershed more will be needed** at a minimum to make additional headway on TMDLs and implementation of our nonpoint source strategy (as well as augment point source regulation, where needed); this need will increase as we add more TMDLs in the next two years to fully accomplish our TMDL mandate. Additionally, AB1740 (Ducheny) was enacted in 2000 and requires that to the extent interest is expressed by the public, and resources are available, each Regional Board shall establish for each watershed where a water body is listed as impaired, an Advisory Committee consisting of the public and interested stakeholders who wish to be involved in the process of adoption and implementation of the corrective actions necessary to eliminate the impairment.

However, with a seemingly impossible workload before us, there is a reasonable and logical way to collapse or group TMDLs to make the most effective use of resources we currently have and any which we may obtain in the future. This is largely due to the fact that some of the "pollutants" for which a water may be listed are actually "effects" of pollutants. For example, many reaches of the Los Angeles River are listed for ammonia. Some of the same reaches are listed for pH problems while other reaches are listed for algae, scum, and odors. It is very likely the presence of these "pollutants" are interrelated. Excessive nitrogen (reflected here as high levels of ammonia) may lead to a condition of eutrophication (excessive nutrient loading) which can influence pH levels as well as promote increased algal growth. Scum may be evident due to floating algal material and odors may result when excessive algae starts to die off. Thus, it is reasonable to group together these TMDLs (calling it a "nitrogen and related effects" TMDL) and approach the problem by determining the sources of nitrogen loading into the watershed and the appropriate allocations in order to reduce loadings.

Another example relates to the Malibu Creek Watershed. Many of its reaches are listed as impaired due to coliform. Other reaches are listed for swimming restrictions or shellfish harvesting advisories (an effect of elevated coliform levels). It is reasonable to group together these various reaches and "pollutants" together when performing a TMDL. USEPA has produced a number of documents relating to TMDL development; these may be found on the Internet at http://www.epa.gov/owow/tmdl/.